



TECHNICAL UNIVERSITY
OF MOLDOVA



Share your story with us
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20⁺
YEARS OF
EXCELLENCE



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CHIȘINĂU
2022

FAF: 20+ Years of Excellence. Guidelines for school graduates, national & international students, academic staff, company representatives, and many others interested in the English-taught Honours Programme in Software Engineering and its community, FAF, and the opportunities offered by the Technical University of Moldova.

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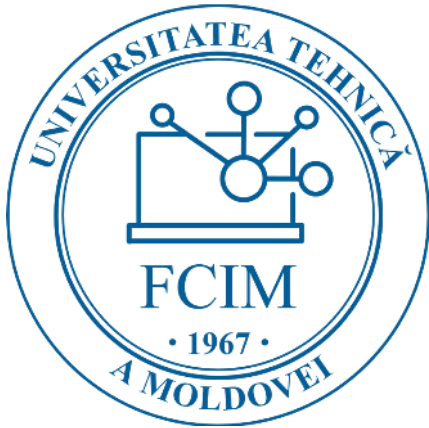
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"A good education is a foundation
for a **BETTER FUTURE.**"

- Elizabeth Warren



Department of Software Engineering and Automation

*English-Taught Honours Programme
in Software Engineering*

ABOUT THIS BOOK

This book covers the opportunities offered by the Technical University of Moldova to school graduates, national & international students, academic staff, company representatives and many others interested in learning about the English-taught Honours Programme in Software Engineering and its community, FAF.

Here you can find information about:

- FAF, a community firmly rooted in traditions;
- Short course description for *0613.3 Software Engineering* study programme (2021 ed.).

For the most up-to-date information, please refer to the TUM website www.utm.md

Have a look, there may be something in it for each of you!

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FOREWORD



VIOREL BOSTAN
University Professor,
Habil. Dr.
RECTOR
Technical University
of Moldova

We are delighted to welcome you to the Technical University of Moldova, the biggest hub where we teach *engineers how to create the future!*

In the context of a rapidly evolving era, when we are witnessing an accelerated pace of engineering innovations, the Technical University of Moldova (TUM) makes considerable efforts to provide fresh learning environments to transform students' educational experiences into more efficient, meaningful, and impactful ones.

TUM strives to maintain its national and international reputation for quality in education and research, which is why it goes beyond the mastery of hard skills, by fostering soft skills to serve engineering students' both personal and professional development. TUM provides study programmes that aim to embrace a synergy between minds-on and hands-on approaches, meant to fully engage students in deep learning.

To better prepare engineering students to face this paradigm-shifting age, we constantly work on improving the curriculum by adding new dimensions like teamwork, collaboration, experience sharing, etc. A permanent effort is aimed at expanding and redefining opportunities to change student-teacher and student-student interactions by using the latest advances in online learning platforms.

The partnerships between our University and the Industry focus on combining technical skills, knowledge, and resources to innovate and address societal challenges, producing groundbreaking research and innovation that solve complex problems, drive economic growth, and create a more skilled workforce. The internship programs in famous national and international companies have emerged as a popular endeavour for engineering students and one where they are enjoying great success.

Our University, besides a top-notch disciplinary education, also promotes community-building activities inviting students to become members of different environments that stimulate and contribute to their growth like BEST, FAF NGO, STUDENT'S TRADE UNION, GIRLS GO IT, MICROLAB, ZIPHOUSE, FABLAB, etc.

We have begun to explore joint courses and programmes with universities from Romania and other EU countries which engage our faculties and departments in issuing double degree diplomas.

Much effort is put to leverage our disciples' competitiveness in the labour market. We constantly focus on providing deep knowledge, and both interactive and engaging experiences by implementing the latest educational methodologies, tools, and interaction platforms to broaden our students' horizons and further expertise.

We strive to raise our learners' awareness by dynamically conceptualizing and sharing modern, useful, and safe technology-change ways of society. The academic staff consistently works to stimulate curiosity, commitment, innovation, and dedication to develop open-minded personalities with fresh perspectives on future technologies and their impact on human life.

And since engineers create the future, we are here to help our graduates become skilled designers of a modern and strong society!



TECHNICAL UNIVERSITY OF MOLDOVA AT A GLANCE

Est. 1964

CENTER Campus

Faculty of Power and Electrical Engineering

Faculty of Electronics and Telecommunications

RÂȘCANI Campus

Faculty of Computers, Informatics, and Microelectronics

Faculty of Food Technology

Faculty of Mechanical Engineering and Transport

Faculty of Design

BOTANICA Campus

Faculty of Architecture and Urban Planning

Faculty of Constructions, Geodesy, and Cadastre

Faculty of Economic Engineering and Business

MIRCEȘTI Campus

Faculty of Agricultural Sciences

Faculty of Veterinary Medicine

**+ 11.000
students**

**+ 600
academic staff**

**Engineers
create the
future!**



AMDAIIS



DIGITAL OPPORTUNITIES



DINU TURCANU

Univ. lect.
VICE-RECTOR
for Digitalization

We all want to have a connected community. To ensure an efficient communication, all TUM students and staff are given a **corporate email account** that doesn't have a limited period of use. Every member is eligible to download Microsoft Office and they may continue using it to get notifications on various university events, even if they do not remain affiliated with TUM.

TUM email acts as a login to the university's internal information system that allows students access to the information needed for successful and transparent activity in university studies. Duo two-factor authentication is required to access its services.

As part of our University Microsoft 365 subscription, or SharePoint Server, individuals can save their files in OneDrive and then work with them from almost any device.

The Student Portal **SIMU** is the most important resource acting as a gateway to all other platforms, providing access to student's records, personal data, online library, and other information.

University email addresses allow students to access the Moodle Platform **ELSE** and schedule courses in **TEAMS**. Official requests to the university's administration should also be sent via TUM emails.





Râșcani Campus



WELCOME TO THE FACULTY OF COMPUTERS, INFORMATICS, AND MICROELECTRONICS



DUMITRU CIORBĂ
Associate Professor, PhD.
DEAN
Faculty of Computers,
Informatics,
and Microelectronics

Today's students need a connected, community-centered campus that encourages them to learn inside and outside the classroom. In this regard, our Faculty, as part of the entire TUM, has found exciting ways to make students become active participants in their learning long after classes end. Implementing active learning strategies doesn't mean staff training and content change only, but also adequate infrastructure and collaborative spaces which have been developed to be used for more than one type of lesson, including lectures, roundtable discussions, hands-on projects, and multimedia presentations.

Attractive classrooms, large lobbies, and recreation spaces aim to focus on designing and supporting collaborative learning, engaging the active minds of students and mentors. Numerous meeting points and collaborative areas allow more interaction by reinforcing the teaching-learning process.

The newly built learning and innovation spaces are configured to pursue ideas and creative solutions to real-world problems providing opportunities to explore new technologies and to engage with peers giving a meaningful impact on their studies.



**Get in touch
with FCIM!**

9/7 Studentilor Street

**Faculty of Computers,
Informatics and Microelectronics**



4

DEPARTMENTS

11

BACHELOR PROGRAMMES

9

MASTER PROGRAMMES

2647 students

210 academic staff

Department of Software Engineering & Automation

Ion Fiodorov, Assoc. Prof. PhD., Head

Bachelor programmes

- Software Engineering English-taught Honours (FAF)
- Information Technology + Filière Francophone << Informatique >>
- Information Security
- Automation & Informatics

Master programmes

- Software Engineering
- Information Technology
- Information Security
- Information Technology for Business



Department of System Engineering & Informatics

Viorica Sudacevschi, Assoc. Prof., PhD., Head

Bachelor programmes

- Information Management
- Applied Informatics
- Robotics & Mechatronics
- Computers & Networks

Master programmes

- Information Applications Management
- Computers & Information Networks
- Data Science



Department of Biomedical Engineering

Oleg Lupan, Univ. Prof., PhD., Head

Master programmes

- Biomedical Engineering
- Microelectronics & Nanotechnologies

Bachelor programmes

- Microelectronics & Nanotechnologies
- Biomedical Engineering
- Applied Electronics



Department of Socio-Humanitarian Sciences

Ecaterina Lozovanu Assoc. Prof., PhD., Head



• ROOM • EVENTS • OPPORTUNITIES • TRADITIONS

JOIN US

NOW



FAF on Facebook



FAF on Instagram

• COMMUNITY • NGO • LECTURES • HACKATHONS



FAF STUDENT
JOURNEY

FAF, A COMMUNITY FIRMLY ROOTED IN TRADITIONS



ELENA GOGOI

Univ. lect.
PBL & Curriculum Coordinator,
Responsible *International*
Office, FCIM

It is well known that the mission of the University is to prepare students for the world of work. Moreover, one of its imperatives is to create communities in addition to courses to ensure that the most interesting and important things continue to happen in-between times and spaces on the campus.

By fostering student communities, TUM strives to build a point of contact for individuals, when they get enrolled, and to provide a significant stepping stone for creating a sense of belonging. **FAF** is one of those that offers various benefits in ensuring that students feel part of the community within which they live.

FAF (an acronym for **F**iliera **A**nglo**F**onă) represents a group of students and alumni who are brought together by the English-taught Honours Programme in Software Engineering (previously Computer Science) as part of the FCIM, TUM.

In 2001 FAF has been adopted as a distinct community to connect students with alumni who will build an intelligent and highly differentiated environment. It reflects and reinforces our students' collective identity as a team endeavour.

We need to let our students bring their creativity to the task at hand. Being involved with the community can help them make it easier to find a job, meet locals, and learn from the best.



Since 2001, the members of this famous community have been providing the opportunity for different events to fill students' social time with senior fellows and graduates, professors, and experts from the IT field by offering co-curricular activities like *FAF lectures*, *hackathons*, *conferences*, and others to help them with their studies and to build a sense of group identity, cohesiveness, and uniqueness.

FAF students keep telling us about what matters to them in building community: making connections by showing up to different events, addressing professional development needs by logging on to alumni career development events in record numbers, offering regular seminars to advance both students and alumni, scheduling FAF parties where students can find their friends and make new ones.

We assume that FAF community will only develop into a more valuable and inclusive space. If there is ever a time for a truly collaborative effort between the university, students, and alumni, this is **FAF!**

2001 - 2007

MIRCEA MIGLEI

Associate Profesor, PhD

2007 - 2016

VIOREL BOSTAN

University Profesor, Habil Dr., TUM Rector

2016 - 2019

ELENA GOGOI

University Lecturer

2019 - 2022

MARIANA CATRUC

University Lecturer

FAF DIRECTORS



BE GREATER THAN AVERAGE



FACEM CEVA CU TOLK



"FAF is more than just a study programme, FAF is about family, being part of something bigger than yourself. When you enter FAF, you become a member of our amazing community of students and alumni. Here at FAF, you get the chance to meet open-minded people, every single one striving to become a better version of themselves.

FAF community extended its initiatives into an NGO, which serves as a beacon of light, bringing new opportunities for our family. Every year, we hold the General Assembly, where we vote on the new board members, in such a way we give the chance to everyone interested to try their hand in the duties of the **FAF NGO** while developing various organizational skills. Our aim as the administrative board is to ensure the process of both personal and professional development through the organization of different events such as hackathons, open lectures, conferences, and board games which bring the community together and allow everyone to share their knowledge and experience."

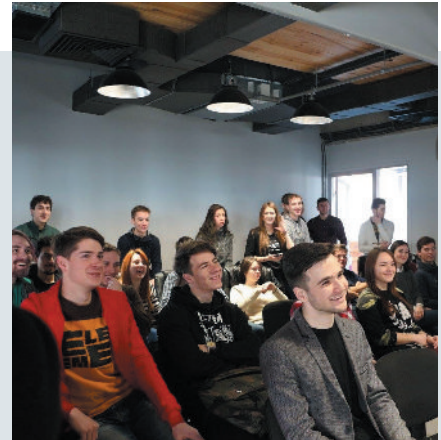
FAF Board (2021):

Constantin Cazacu, Ana Șarapova,
Antonela Malîi, Roman Botezat





STUDENT JOURNEY



FAF Lectures serve as a great time for students to meet fellows, alumni, and experts from the IT industry who are willing to share their experiences and success stories with them.

During these lectures, the speakers focus on a broad spectrum of topics, ranging from various hard and soft skills to even the more business-oriented topics, such as the difference between the corporate & start-up environments.

FAF LECTURES



FAF Hackathon is one of the most important and the most awaited open event dedicated to the IT passionate students of the Technical University Moldova. Being guided by mentors who are senior FAF-ers, current & former students and alumni, or IT specialists and experts, small teams of students will spend exciting 24 hours developing a product that will address a topic proposed at the beginning of the event and which will be aimed at solving a problem. The topics are always related to new technologies such as Artificial Intelligence, Game Development, Virtual/Augmented Reality, etc. During Hackathons, students have great networking opportunities, build new connections, and plan future collaborations with IT companies' representatives. Among the entertainment elements, participants get prizes, free goodies, delicious food, and, of course, they have a lot of fun.



Dragoș Străinu
Full Time
Hackathoner (50+)
FAF-151

"At the beginning, you are scared because there are a lot of people around that are talking about unknown things, but the primary goal is to have fun, create connections, learn new skills, teach newbies, and explore new technologies. Even if there is some competition, usually teams help each other. Hackathons are not mandatory to become a successful programmer, but they help you achieve this goal faster."

FAF HACKATHONS





FAF NETWORKING



The 256-th day of the year, also known as International Programmer's Day, is dedicated to IT enthusiasts & to those who work in the IT field.

The number 256 was chosen because it is the number of distinct values that can be represented with a byte, a value well known to programmers.

Being a joint event effort of the TUM administration and FAF community, it is filled with people from every possible branch of the IT industry, amazing speakers, interesting discussions, and of course, an after-party to wrap things up.

PROGRAMMER'S DAY



"We are proud to be organizers of a special international event and the biggest conference in Eastern Europe dedicated to the Ruby programming language. Ruby Wine is intended to promote the Ruby programming language countrywide and fortify the existing Ruby community.

It brings together 200+ professionals and enthusiastic students for knowledge sharing and it lets them explore new insights into Ruby's possibilities. The conference is the result of a beautiful collaboration between FAF and Ruby Meditation. This event is a perfect mix of top-notch talks by talented Ruby developers and an amazing Moldovan atmosphere."

Victor Colța
FAF-161

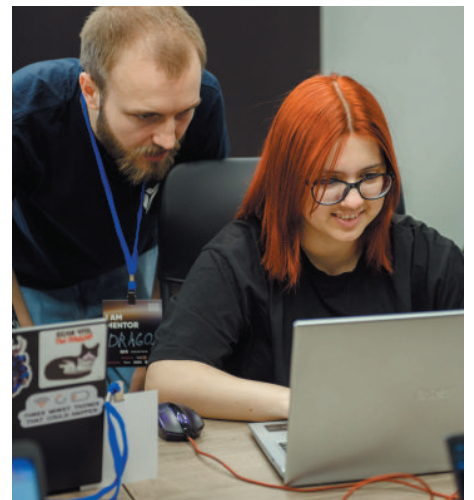


INTERNATIONAL CONFERENCES



AND, OF COURSE, A LOT OF FUN!







All year round FAF students organize lots of community events: FAF Board Games, Puzzle Day, Excursions, FAF Anime Nights, etc. These events gather students to chill together and serve as a great way to end the week, semester or year.



A longstanding FAF tradition, **FAF PARTY** has always been an event when the new and the old FAF-ers would meet and have fun.

Usually, FAF PARTY takes place twice a year. In autumn, FAF Community welcomes the freshmen, while in spring newbies organize the party for senior years. Music, games, dances, food, and drinks are all about xFAF. Also, students can stay overnight to enjoy the company of FAF community.

FAF PARTY (XFAF)





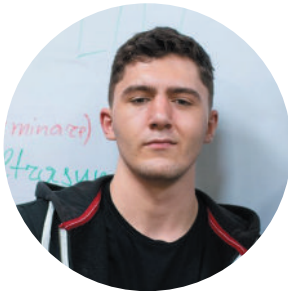
Georgeana Globa
FAF-211

"After a productive and fulfilling day, or after an exhausting lecture, our FAF-ers all gather in our dear **FAF room**. In this amazing space, we prepare our labs, revise for an exam or help each other with the homework, and when in need, we can always find senior FAF-ers to help us with sophisticated assignments and missed deadlines. Here we can, also, have some tea or coffee and hang out with our friends. You are always welcome to our cozy corner, FAF room!"

FAF ROOM

STUDENT EXCHANGE PROGRAMME

The *Student Exchange Programme* allows TUM students to go abroad and join academic programmes all around the world. Students are encouraged to study at partner universities and take courses with credit transfer opportunities.

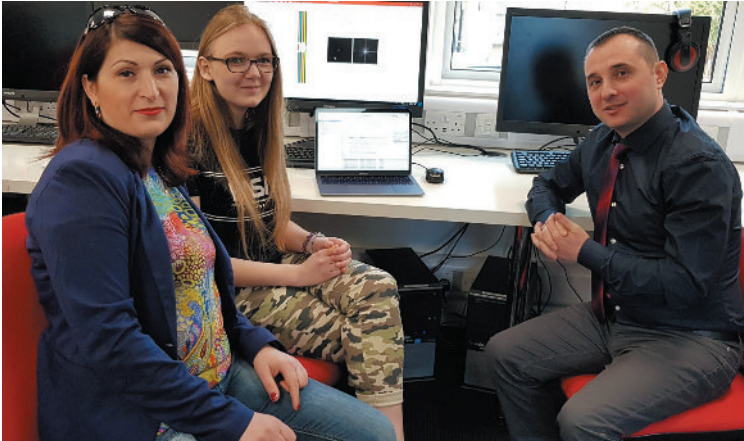


Vitalie Roibu
FAF-171

"FAF is a community of outstanding and ambitious people. Many FAF graduates are still active within this big and friendly community and it is a great chance for the newcomers to learn from their experience. There are many events where members can get to know each other and broaden their network.

Being at FAF means having unique opportunities. I was involved in the PBLMD project & exchange programme, studying for one semester at the Aalborg University (AAU), Denmark and I can say that there is a big similarity between the methods of study of the two universities, meaning that PBL is an excellent approach for the study programme."

EXCHANGE STUDENT GERMANY & GREAT BRITAIN



"One of the best things about being a part of FAF family is the opportunity to study abroad. I am lucky enough to have studied both in England (The University of Gloucestershire) and Germany (Technische Universität Ilmenau), and I believe that each of these experiences has shaped me in some ways.

Studying abroad was not easy, but I never expected it to be. By the end of my second academic exchange, I got a taste of it and managed to obtain 37 ECTS (although I only needed 30 credits, according to my Learning Agreement). I also received an award for the best presentation at a scientific conference held at TU Ilmenau. Being an exchange student made me way more assertive and taught me to lead a more adult life. This experience is very valuable to me, and I would never trade it for anything else."

Anastasia Ivanova
FAF-172

EXCHANGE STUDENT DENMARK



Dmitrii Broli
FAF-172

"Personally, Erasmus+ was a great experience (that I wouldn't mind trying again). The new culture, new people, and different education methods, all of these things made a positive impact on me. It is an experience every student should try. The main challenge is to adapt to all the new things and it can be stressful, but it is extremely rewarding and satisfying.

Overall, I've had an enjoyable time, and if I had an opportunity, I would go for it again. Thank you to everyone who has helped me in completing this path, and if you are one of the students who knows there is much more to life than what you experience every day, I challenge you to take the road of mobility, because FAF can gift it to you. I would certainly want to be in your shoes and to take it again."

"FAF is also about the opportunity to study abroad and shape your character faster than the average. I've been offered the opportunity to study in Denmark and I took it. The semester spent at Aalborg University was a gift I will always cherish because it opened my eyes to people, cultures, and technology in ways I couldn't have had the chance to otherwise.

I stepped into the scary world of the unknown when I decided to take the opportunity to be by myself in a foreign environment, and it wasn't easy. But like those times when you have to lift heavier weight to grow, at the end of the academic mobility I looked back and I was proud I did it. I left Denmark with a bunch of knowledge about Robotics, with a more shaped character, with an open mind, and with a more adult attitude towards life."



Ana Turcanu
FAF-171

BEST (BOARD OF EUROPEAN STUDENTS OF TECHNOLOGY)



Cristina Lîniuc
FAF-171

"For me, FAF is about great opportunities here in Moldova. FAF is about learning about teamwork and about supporting and helping each other. What is more, FAF is about a lot of ways of self-development, not only during lectures but also in being involved in different students' organizations.

One of them is BEST, present in 93 universities in 34 European countries. There I have cultivated skills like public speaking, time management, and leadership. Besides, I have travelled to various countries and met friends with diverse cultural backgrounds. Don't miss such opportunities and take the maximum from them!"



FEMALE STUDENTS IN ENGINEERING LEAGUE



Adriana Sanduța
FAF-181

"The league is a community of engineering female students and graduates, mainly from the Technical University of Moldova. The main mission of the organization is to stimulate and encourage women and young ladies to reach their full potential as future engineers and leaders."

FAF is the place where the potential of each individual is discovered. The whole STEM domain is researched and studied within the Software Engineering program. The STEM domain is very large and diverse.



Ștefănița Ciutac
FAF-182

STEM is more than just research laboratories and technology companies. Nowadays, the IT industry has evolved so much that to pursue a career in technology you just need to turn on your creativity and civic spirit. Go for big things and step out of your comfort zone. Give your goals and achievements an IT perspective and technological view of the future."



ENGINEERING CLUB MICRO LAB



Dana Speianu
FAF-172

"FAF has shown me that being a skilled engineer means not only knowing how to write code but also being able to work in a team, organizing the development process in such a way that you get to a successful output.

FAF gives you a lot of opportunities for self-development. I highly recommend you to get involved in volunteering activities and projects because each experience and failure will only bring you benefits and will positively influence your development as a valuable engineer.

Being a FAF student I had the opportunity to volunteer at the Engineering Club Micro Lab which is a non-governmental organization aimed to develop engineers from Moldova in such fields as IoT, Robotics, Automotive, Embedded Systems, and Intelligent Systems. I have accumulated a lot of experience in a lot of fields such as human resources, logistics, public relations, and especially project management and I am sure that this knowledge will only bring advantages in my career."



GIRLS GO IT



Diana Marusic
FAF-171

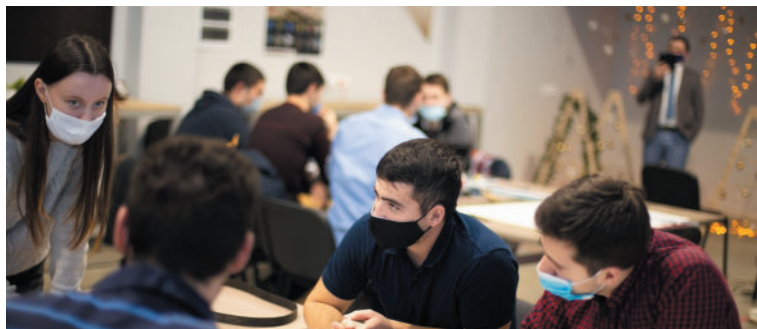
"FAF is not only about studying interesting things and writing code at laboratories, it is also about students who are involved in more activities, from volunteering to making the world a better place. For example, I met with some of my colleagues from FAF at the Microlab Engineering Club. I was involved in this club since high school and later met with FAF-ers while participating and organizing events as a team member.

I continued also to be involved in the GirlsGoIT programme as a trainer, from the Robotics track to organizing the Data Science track this year. Not to forget to mention "ITeens community" and "Artificial Intelligence in Action" - online Facebook communities of young people passionate about IT (ITeens Community) and more advanced communities that discuss Artificial Intelligence."



**Girls
GO IT**

FABLAB CHIȘINĂU



Paula Popescu
FAF-191

"Software Engineering is a study programme that becomes a lifestyle. It has offered me the possibility to learn from the best teachers, improve my knowledge in both software and soft-skills domains, be part of a great community, and implement my knowledge each semester in a new project.

FAF is a good beginning of practice for life which offered me the opportunity to become a part of FABLAB Chișinău, a hub, an engineering zone, and a maker space. It is a creative space with practical implementation, which provides the opportunity to develop new projects for people that are interested in hardware. FabLab is the ideal place for YOU to turn your idea into reality. Here you can find various tools to prototype, create, and adapt your product. The main goal of FabLab is to create a community of engineers that will create the future."





$$B > \frac{1}{n} \sum_{i=1}^n x_i$$

(BE GRATER THAN AVERAGE)

**They have
reached
IT!**

Thank you

Wow~



2010

FAF-061



2012

FAF-081



2014

FAF-101



2015

FAF-111



2012

FAF-121



2016

FAF-121



2013

FAF-131



2017

FAF-131



FAF-141



2015

FAF-151



2019

FAF-151



2016

FAF-161



2020

FAF-161



2017

FAF-171 & 172



2018

FAF-171 & 172



2019

FAF-171 & 172

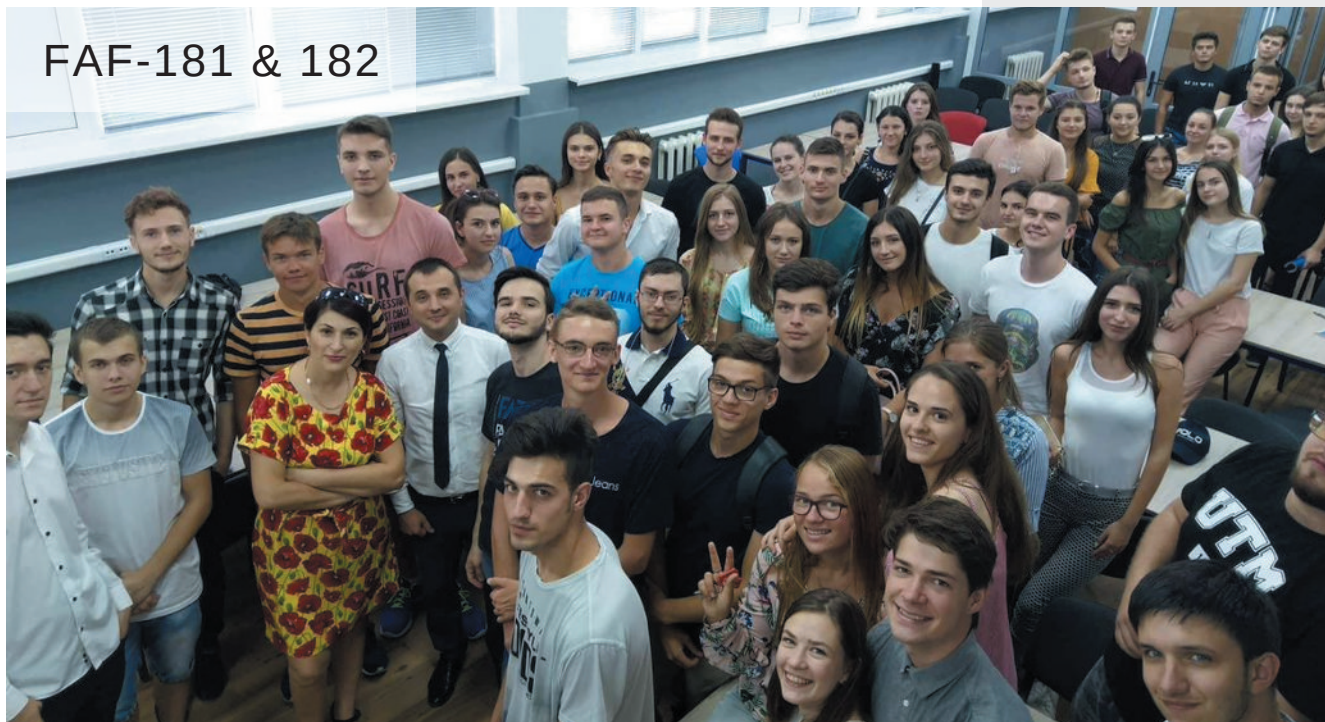


2021

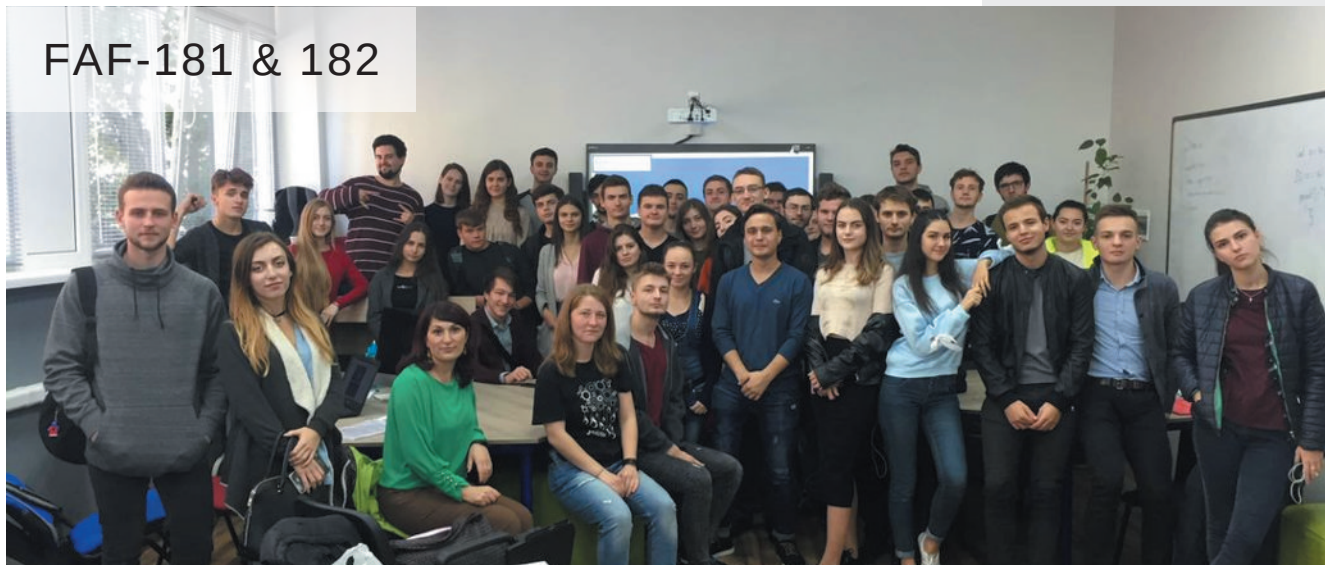
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FAF-181 & 182



FAF-181 & 182

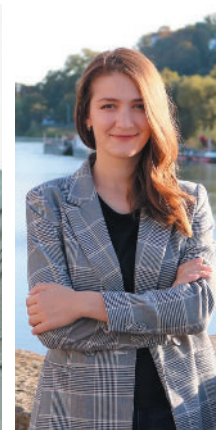
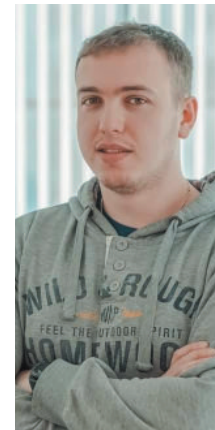






THEY ALL HAVE A STORY

INSPIRING STORIES OF SUCCESS





"The university had a major influence on my life trajectory. I met like-minded colleagues and interacted with top-notch professors who inspired me with their level of expertise. This environment encouraged me to explore computer science in depth, and progress from a fan of video games to an engineer who can tackle a very wide range of problems. This experience unlocked many doors, for example - I joined the Fulbright Program, and later - the Marie Skłodowska-Curie research program. It also gave me the confidence that I can be wherever I want to be, and do the work I enjoy doing.

Although the university years were not without rough patches and challenges, that period brought me a lot of joy. I was happy to return later as a lecturer and take a shot at improving the things I did not like when I was a student, and possibly play a small role in influencing the trajectories of other people.

Without a doubt, the Technical University, and FAF, in particular, was most likely the best choice I could have made back when I graduated high school and was planning my next step. If you are geographically constrained to Moldova, if you like computers and are willing to accept some maths in your life - this is one of the best combinations of cards you can get."

ALEX RAILEAN, FAF-031

Software engineer & researcher



"The Technical University of Moldova and especially FAF gave me the opportunity and the right environment to grow and become a great software engineer. Besides the technical skills taught by inspiring professors at FAF, the community was always motivating me to go the extra mile and develop myself in other areas. One of the extra skills which I'm especially proud of was teaching other young engineers and encouraging them as well to grow beyond software engineering.

Currently, I am building products used by millions of people in a unicorn Silicon Valley company, which was always my dream. FAF community is so strong that even here in London all my close friends and colleagues are FAF graduates which I'm extremely thankful for."

SAVA VÎRTOSU, FAF-081
*Product Engineer @Intercom,
London, United Kingdom*



"FAF gave me the basic skills for thinking as an engineer. The skills obtained in FAF helped me to develop a business in other domains like delivering leadership training. The most important part was the environment of being with the best students in the same group. If you want to be the best you should have the best people around you. I was the best pupil in school, but in FAF we were the 25 best students and that was very important for me. I have been an IT entrepreneur for 7 years and as a team leader, I solved lots of bugs very fast even though I was not writing codes daily.

Currently, I am running the best Public Speaking School in our country, *Professional Speaker*, which is a nice combination between engineering and emotion. I am sure, nowadays, FAF is the best option to get in a great environment with the best from the best and to develop a strong engineering mindset for your future."

ILIE DERCACI, FAF-061

*Leadership & Public Speaking Trainer
Co-Founder @Professional Speaker*



"Since I got my first computer in 1996, I knew my life would be related to IT in one way or another. Little did I know that the software engineering domain was going to be that exciting in 20 years. I knew I made the right decision when I applied to study at the Technical University of Moldova. And I was lucky enough to find and join FAF group, which strengthened my English knowledge and gave me a strong foundation on which I could build my career as a Software Engineer. I also got to know wonderful people with whom I became friends and business partners. Finally, studying at TUM gave me the necessary skills and knowledge to be able to easily pick up new programming languages and learn new technologies.

Since I graduated, I have launched my startup, won hackathons, attended startup accelerators, and, of course, gave back to the amazing FAF community by teaching younger generations of FAF students as a lecturer. Currently, I'm part of the coolest freelancing agency in the world - Toptal, where I can choose which projects I want to work on and have the freedom to work from anywhere in the world."

IULIAN GULEA, FAF-061
Senior Software Engineer @PepsiCo



"After 2 years in FAF, I won an Erasmus Mundus scholarship at Czech Technical University in Prague. FAF made it possible for me to study for 1 year in a foreign country, communicate with new people, and learn from them.

I improved my technical English significantly so that when I returned to Moldova for my 4th study year, I had no problems writing my thesis in English. These 4 years gave me a very rich starting experience in my future professional career in IT."

IAROSLAV CIUPIN, FAF-111
Staff Engineer @Crunchyroll

"I studied at FAF where most subjects were taught in English. I can say that it was a very useful experience for me and played a major role in my development as a programming engineer. In addition to all of this, I had the opportunity to participate in the Erasmus program which allowed me to study for 1 year in the Czech Republic, thus developing communication skills in English. I think the most important skill I acquired was to learn to handle and look for solutions in any situation, independently, directly related to the job or anything else."

DAN CARAGANCIU, FAF-121
Project Manager @Reign Code





"FAF was life-changing. I met so many wonderful people; here we supported each other, challenged one another, and had a lot of fun together. I didn't know where it would take me when I started, and I'd never expected to have so much fun doing it.

I didn't know where I was going when I started supporting a team of developers to build a product that's still growing today. I had no clue what I was doing when we started a startup and failed miserably and even now, when I'm helping tech teams scale sustainably, I still have the backing of my FAF friends. This is a community of mentors with whom you will form lifelong connections. I'm lucky to still be a part of it. Thank you, FAF!"

IVAN ZAREA, FAF-081

*Engineering Manager@ Netlify,
Amsterdam, Netherlands*

"While being a student, I always imagined that working at big tech companies was an achievement of genius software engineers. But after a FAF lecture on this topic and discussing it with fellow FAF-ers that achieved this goal, I decided to give it a try. One FAF-er referred me to Facebook and another one to Amazon. Following the advice from FAF lecture, I prepared the CV and exercised algorithms. I went to a round of interviews but I failed. I was upset but not demotivated. I exercised more and in a year I applied again. This time I succeeded, and I would say that a part of this success is due to the advice and support from my fellow FAF-ers."

DRAGOȘ STRĂINU, FAF-151

*Frontend Engineer @Amazon,
Romania*





"Even though it's been a long time, much of where I am today can be traced back to the seeds planted during my time at the university and has to do with me being a part of FAF family. It was a community where I could always find people who would encourage me to go above and beyond what I thought was possible. I found myself in a group of like-minded individuals who were passionate about learning new things and enjoyed sharing that knowledge with others. We had amazing teachers, some of them, former FAF students.

They exposed us to various technologies that were not necessarily part of the curriculum and encouraged us to seek out and take professional opportunities. This is how I learned about Ruby on Rails and the Google Summer of Code program. It was during this program that I was referred by my mentor for an internship at Shopify, which eventually led to a full-time offer and resulted in me moving to Canada. The rest, as they say, is history."

ANDREI ISTRATII, FAF-121
*Staff Software Developer @Shopify Inc,
Ottawa, Canada*



“Software development and computer science are changing the world, as we know it, for several decades already. I’ve become passionate about technology since early 2000 when my elder brother got his first ZX Spectrum. I knew years before that I’ll join an engineering faculty and I got inspired by the experiences my older friends have been sharing about Computer Science at FAF. The innovative and modern curriculum, best lecturers, and professors in engineering made me realize that there is no easy road ahead to becoming an engineer and a software developer.

The smartest people from all faculties joined efforts to become future innovators and invested heavily in their fundamental knowledge over 4 challenging years, going through multiple competitions, hackathons, summer of code, etc., such that each and everyone could change the world in the future. After graduation, I joined a project with my older colleagues wishing to bring more openness to the financial world and after 8 years we’ve become a global Fintech company developing solutions for Banks, Accounting Platforms, Lenders, and Credit Bureaus around the world, leading the open banking revolution from the Republic of Moldova.”

VLADIMIR PÎNTEA, FAF-091
Open Banking Consultant
@Salt Edge Inc.



"While being part of FAF family, I had a chance to interact, work and learn from many great engineers and professors that have inspired and encouraged me to pursue a career in IT.

I think that being part of FAF allowed me to broaden my horizons and help me understand how business solutions are applied to IT environments. Moreover, it assisted me to employ a mixture of nontechnical skills along with the study curriculum. Nowadays, it is not enough to be proficient in just one field, because access to information is widely spread so that anyone can master a particular domain. However, I think that the true challenge is to bind principles from different fields in one area that has a huge impact on modern society.

FAF is a great place to bind a big variety of such principles in one area.

Besides meeting great individuals within FAF community, attributable to this amazing program, in my 2nd academic year, I was given a chance to study at the Czech Technical University (CTU) in Prague for two semesters as an exchange student with all costs covered. The IT courses that I attended at CTU along with the valuable advice I was given by Czech professionals, motivated me to seek even more new opportunities for my further development.

Thus, once graduating from my bachelor's programme, I applied and got accepted to several master's degree programmes abroad. In 2016 I moved to Sweden to study at Örebro University for 2 years as part of the Visby Scholarship. As a result of my master's academic performance and extracurricular activities, I was nominated to be in the top 10 best master's degree students from Moldova who study abroad by the GSORM organization. In Sweden, I was given a chance to be a member of the Future Global Leaders Network at the Governmental Swedish Institute Agency along with other erudite students from all over the world. There I increased my ability to run projects, develop leadership skills and meet many interesting people.

Upon completing my Master's degree I moved to Tokyo where I was given a chance to participate in the "Vulcanus in Japan" scholarship program that allowed me to study for 4 months the Japanese language & culture at Naganuma School and to do an 8-month traineeship at Goldman Sachs as a software engineer. After spending 1 year in Japan, I moved to Singapore. I strongly believe that the knowledge, skills, and experiences that you can acquire from being part of FAF will contribute greatly to your career path."

CRISTIAN CARTOFEANU, FAF-121

*Software Engineer @Goldman
Sachs, Singapore*

"When I finished high school, I applied and got accepted to 3 universities: Technical University of Moldova (TUM) and two other universities in Romania. The application results from Romania usually arrive a few weeks later than the ones in Moldova, so I started my studies at TUM. Following the two admission exams, I got transferred to the Anglophone Department (FAF), which is a group of 20-30 students doing their studies for the Computer Science degree in English.

Short after that, I made new friends with my colleagues that started at the same time as me or years earlier, met the professors, assistants, and a few FAF alumni (the latter three being the same person sometimes). Realizing how strong of a community it represents, how many smart colleagues I have, the benefit of studying in and improving my English, I decided to give up on my initial plan of going to Romania and continue my studies there.

I am currently working as a Data Scientist at UBS, the biggest Wealth Manager in the world. I ended up here after following a double degree MSc in Data Science between the Polytechnic University of Milan and the Royal Institute of Technology in Stockholm. I got accepted to the master's with a full scholarship primarily because of the breadth of topics covered at FAF, and without needing any extra English certifications.

Following my master's, I worked as a Data Scientist for a year and a half at Amazon in Luxembourg, where I was constantly using the computer science skills that I learned and got to practice at TUM. In my current job, I often catch myself remembering bits of calculus lessons given by Mr. Bostan, or design patterns from Mr. Zarea. I am convinced that this combination of advantages is specific to FAF, as I have rarely met colleagues with all these topics covered from their bachelor's. Combining FAF with the extracurricular activities available at TUM, in my case, the student organization BEST, made me a strong professional and gave me international exposure, both relevant to where I am today. It doesn't matter how many times I look back at my decision to stay at TUM and follow FAF, I always conclude that I made the right choice."



ANDREI CĂPĂSTRU, FAF-121

*Data Scientist @UBS,
Zürich, Switzerland*



"For me FAF is a talent pool of bright and open-minded peers sharing the passion for engineering and being a live example that with hard work, determination, and guidance one can achieve success, in any of its kinds: becoming a top engineer at a renowned company, a strong project manager, a skilled entrepreneur, a tech evangelist, a famous keynote speaker, a respected member of the IT world and in the end, a person with enough knowledge and tools, who uses them to bring progress to the world, and ultimately making it, hopefully, a better place. I consider myself lucky to have had the opportunity of being part of this pool and honoured to be one of its alumni members.

In my view, the most valuable resource in FAF is the people with whom I have spent my university years and with some of whom I was or have grown close friends in life.

Of course, none of this would have been possible without the massive effort and dedication of our beloved professors, whom I prefer to call our mentors and guides because I consider that they taught us more than our profession - they taught us life. Mentors who cared for us and helped us at any time, polyglots who regardless of age, had extensive knowledge in the field, and taught us in English, specialists who found time and patience to offer us courses while working for companies, and scientists who were over retirement age, honoured us with their presence, former TUM graduates, who inspired us with their attitude and merits, prestigious awards winners, both in Moldova and internationally - the series can continue indefinitely. What is definitive is that our esteemed professors have given us all the possible facilities to become who we are today. And for that, I am extremely grateful!

FAF offered me the opportunity to receive a quality education in the IT field, which helped me in many instances as a student, especially after I graduated. The curriculum was a combination of essential engineering and specialized disciplines, which became more focused and challenging the more we advanced in our bachelor cycle.

DANIEL MACRINICI, FAF-121
*Software Engineer @ING Bank,
Netherlands*

The flexible teaching style (media presentations, combining online and physical resources, dividing courses into theoretical lessons and practical labs) along with the good facilities (well-equipped laboratories, special designated working hubs, access to various utilities, etc.) has been a great aid in the studying process.

Moreover, I recall that TUM began to implement the international PBL practice, which brought additional benefits to students by developing analytical skills and stimulating proactive thinking - qualities currently sought by any recruiter.

Being first-year students, we all got together and we decided to immortalise the unique moment, namely the date: 12.12.2012, exactly at 12:12! The moment was quite important because it was unique in our lives (for some it may not be), but the next date in the same format will be on 01.01.2101. And given the end of the world (or at least the Mayan calendar) was expected on 12/21/2012, it definitely added to the suspense (see the photo on page 51)!

Being a FAF student in the 3rd year, I got the opportunity to study for a year at CVUT University in Prague as an exchange student, as part of the Erasmus program. It was a colossal experience for me, that made me more receptive and flexible, more conscious and mature, and more motivated to know and understand the world around me. I was pleasantly surprised when, in my senior year, I noticed that the 3rd year's "Computer Science" FAF curriculum could be easily matched with its equivalent in Prague. In our senior year, many of us were already working in IT and, at the same time, studying - which was not easy, but which proved that students are already appreciated and valued as important resources for companies while still being undergraduates.

A big advantage of FAF is the network of students and graduates, through which many of us did internships, found jobs, or at least participated in events such as hackathons or FAF parties. In addition to networking and entertainment events, many of us got also involved in the BEST association, which brought together groups of volunteers with a common goal - to promote STEM values around the world, by organizing engineering competitions, and offering academic course experience through exchange programs in-land and abroad.

Being students in the fourth year, after passing the state exams, we met with the group in one of the study rooms, on the 1st floor, building no. 3, and we witnessed an exceptional speech by Mr. Viorel Bostan, as our group coordinator, mentor, and friend. I don't remember the exact words of the rector, but the essence was:

"Dear students, you have reached the moment of graduation and I congratulate you on this occasion. I want to give you a piece of advice that I urge you to remember and follow throughout your life: In the life of every human being, there are 3 essential things:

1. Partner (family) - choose as a life partner that person, with whom you will want to spend at least 1/3 of your life, whom you will see daily, and who will cause you only positive feelings,
2. The job - find a job that satisfies you from all points of view, taking into account the years you have invested in your studies (12 years of secondary education + 4 years of higher education), respectively make the effort to get a good job, which will not make you count the working hours, but on the contrary, create the feeling that time flies with meaning and offer you that mental stimulus and intellectual reward that you have become specialists in the field.
3. The bed and the mattress - Don't forget, that 2/3 of your life you will spend with your family, at work. Respectively, the remaining 1/3 will be in bed, so don't skimp on getting a good, quality bed and mattress, so that you can enjoy those 8 hours with your partner. "

After much laughter and a series of applause, each of us realized how universal this phrase is and how applicable these axioms are in everyone's life!

After graduating and obtaining my Bachelor's degree, I won the Visby scholarship of the Swedish Institute and pursued a Master's degree in Sweden in Information Systems and IT Project Management, which helped me to land a job at ING Netherlands - one of the most innovative banks in the world.

Thank you, TECHNICAL UNIVERSITY OF MOLDOVA!

Thank you, FAF!"

DANIEL MACRINICI, FAF-121
Software Engineer @ING Bank,
Netherlands

"We live in the golden age of computing and I was fortunate to select this field of activity and build my professional career around it. Studying Computer Science at FAF, Technical University of Moldova laid a solid foundation for the years to come.

This is because what FAF offers is the most important opportunity, as nowhere else in Moldova. FAF created a unique environment where collaboration, interaction, and implementation of cutting-edge technologies and methods of teaching are key.

There is no such thing as a *free lunch*, and at the end of the day, one should work hard to achieve their dream. But studying at FAF enables one to do so. That is why the very first job I got straight after the university was at Amazon, one of the top IT employers in the world. And the possibilities are limitless - essentially you could work wherever you want and for whichever company you want.

FAF gives you a taste of all of it - web development, scientific computing, game development, performance-critical applications, real-time systems, distributed systems, and even spatial technologies if you will. That is, of course, after laying the foundations for software engineering in general, and preparing one for any field, which might not yet exist."



MAXIM CHETRUȘCA, FAF-101
C++ Developer @Maverick Derivated



"Well, FAF can be anything from "a study programme" to a "life-changing choice". Software Engineering can be taught in different ways, maybe through courses on Youtube, maybe through books on this subject. But nothing compares to the way the Technical University of Moldova taught us Software Engineering, and here is why:

In the first year of study, our mentor and teacher Dumitru Ciorbă said that we shouldn't focus on learning a specific programming language but focus instead on developing an Engineering Mindset for problem-solving.

Well well, after graduation, I could adapt to any programming environment, to design, code, test, and deploy an application. FAF taught me to learn fast and not to be afraid of new technologies.

There are over 8 projects in my portfolio that allowed me to work with over eight different teams, unique individuals with their own experiences and points of view. I did realize very fast that teamwork is one of the hardest skills to gain. It's easier to create the script for an E-commerce application than to learn to be a team player. When you are a Product Manager, your job is to efficiently communicate with developers, designers, project managers, data analysts, etc. So I can certainly say that due to this experience at FAF, I am now the best team player I can be. Thank you, FAF, for that!

Is it just me or any FAF alumni who can talk non-stop about this study programme? Choosing FAF was, without knowing, my first step in building a successful career in Informational Technology World!"

INA BOTNARU, FAF-172
Product Manager @Simpals

"It is with great nostalgia that I recall the academic years spent at FAF, Technical University of Moldova. Probably because I realized the impact those years had on my career much later in my life. When I think about it, so many memories come to my mind, moments of fun, hard work, and sleepless nights.

A thing I know for sure: the people, the atmosphere at FAF... it changed me. All those days, so diverse and so intense at times, taught me that to achieve your goals, you need to be resilient in life and sometimes push your limits.

I learned so much thanks to all the great teachers we had, who always knew how to make my colleagues and me curious about everything that represents Computer Science and much more. Who knew that all those TPI lessons, where Mr. Bostan would continue writing on the wall way after the blackboard was finished, would become memories of a lifetime?

We had so much to learn and no time to lose. All I know is that today, after almost 5 years of different work-related experiences, in our country and abroad, I want to say a big *Thank You* to everybody at FAF who contributed to building my confidence to explore the world and making me become the person I am today."



GINA GUŞAN, FAF-121
Software engineer @Amadeus,
Nice, France



"Now, some years after I graduated from the Technical University of Moldova, FAF, I am a Java Developer, Java Trainer and Project Manager, Book writer, and Entrepreneur at IUCOSOFT Group! While success means something different for everyone, for me, right now, it means doing what I am passionate about, as someone said to me on my last day of university, choose wisely your job, because it will take you at least 8 hours a day!

Coming in the first year at FAF, I was already working as a junior java developer, as I took Java programming courses at IUCOSOFT during high school.

Was it difficult to combine work with studies? Not at all. I believe that when we have more to do, we succeed in doing more!

However, I considered it extremely important to come to the university as I was sure that when I graduate I will be a better version of myself. And this happened! How? With the help of a wonderful community called FAF and A LOT of hard work! At FAF I met teachers that became mentors who challenged me to become better and colleagues that became a community!

Now, I realize that when we choose a university, we choose the community that will shape us, a community where we could meet the right people to guide us through the multitude of things that one can learn. And I do believe, it is the most precious thing a university gives you, guidance and support to learn and to develop yourself and freedom to choose your direction, and all this with the purpose to take you to another level!

At the end of my university years, the entire academic group proudly exclaimed: "We did it!", meaning that we did become better!"

CORINA ȚÎLEA, FAF-151

Java Developer & Trainer

@IUCOSOFT Group

"Every FAF-er has its definition for what FAF is, and here's mine. FAF is a function that takes 3 inputs — smart students, wise teachers and a competitive environment — and produces high quality engineers as an output. While it sounds simple, under the hood, there's a lot of hard work: many assessments and course assignments that should be completed in time and countless hours spent on reading and writing course materials.

Another caveat of this journey is not to be employed too early, before graduating from FAF. Comparing tasks at a job and laboratory work proposed by university assistants, it's much more tempting to apply for a job because it's more tangible, in touch with newer technologies, and, for sure, it solves real-world problems.

While such tasks seem exciting at the very beginning, they tend to be in the same field. Meanwhile, the faculty's proposed tasks are from various fields and of different complexity and provide wider insights into the whole industry.

After graduating from FAF, I joined an international fintech company and I'm happy to work there and create high-quality products. Each day I use the knowledge gained from courses on databases, distributed programming, calculus, security, digital signal processing, operating systems, management, marketing, and many more.

Each day I remind myself that nothing of this would have happened without FAF."



ALEXEI ŞERŞUN, FAF-151
Senior Ruby on Rails Developer
@Salt Edge Inc



"Studying at FAF is an experience to learn in an open-minded and friendly setting, but at the same time having high standards in terms of modules and subjects. It is a challenging, but reachable challenge when it comes to individual work. If you are 100% committed, there is no way you cannot overcome any challenges.

Teachers are very passionate and dedicated to their subjects and they are also open to receiving feedback from students. Due to my degree in Computer Science through FAF programme, I had the opportunity to travel outside the country by applying to an Erasmus Program. Eventually, after I finished the degree,

I landed a software job in the same country I did my Erasmus Program and was able to further develop my career. During the years of study at FAF, I made meaningful relationships with colleagues, and each of them had individual strengths, which inspired me to grow as a person. I also participated in plenty of extra-curricular activities that helped me develop my leadership and social skills, or taught me lessons that I believe will last a lifetime."

CRISTINA ALEXA, FAF-121

*Psychology Conversion Student @Trinity College,
Dublin, Ireland*



"If you ask me what I want to become when I grow up, I will answer - a mechanical engineer, ... and an architect, ... and a scientist.

I think that in each of us there is still a child who aspires to do something meaningful when he/she grows up. Thankfully, I am privileged to have the opportunity to be an "architect", a "scientist", and a "mechanical engineer". All thanks to Computer Science, FAF, and BEST.

FAF environment is a particular medium where excellent teachers, a great student community, and the lust for knowledge are combined to drive the software development progress. After graduation, I started applying and enhancing my software development knowledge at Endava (one of the top 100 IT companies in the world). But one should strive for continuous improvement, so I have continued by studying Information Security and Cloud Computing.

I have continued to learn about distributed technologies and had the privilege to contribute to securing the telecommunication solutions at Nokia. Currently, I decided to focus more on Cloud Computing and software optimization."

VICTOR ȚURCANU, FAF-121
*Software Developer, @RELEX,
Helsinki, Finland*



"I'm Ana-Maria and I am currently a Data Product Manager designing and developing products that help hundreds of entities to optimize and improve their businesses. Looking back nowadays, FAF is what build me as a person, it's what gave me a push to never stop believing and always strive for more. It's what gave me the necessary skills and knowledge for my current role.

As a FAF student, I had lots of opportunities: studying Computer Science abroad for one semester in the United States, attending international conferences in Europe, and building and developing innovative projects.

FAF is not just about studies, it's about its people and community. It opens a gate to a great network. Together with FAF peers we developed ideas and organized a big international conference, Ruby Wine - the 1st conference dedicated to Ruby programming language in Moldova. Together with my colleagues we created an NGO, we continue to develop projects, and who knows, maybe one day we'll build a corporation. FAF is where great minds will gather!"

ANA-MARIA BRÎNZĂ, FAF-141
Data Product Manager @Extole



"I can say that FAF community was one of the best things in my life. Being around the people that have out-of-the-box thinking in their genes is super cool. Every person that you were around had some unique personality traits that you were like *how he/she does it*. You always competed and wanted to become a better version of yourself. Starting from the laboratory works that you could spend 48 straight sleepless hours on not for the mark but for the pleasure of solving it and reaching the damn answer and finishing with the hackathons and parties that we had during the years, everything was so exciting.

I remember that most of the weekends we would just go to FAF Room to work on some extra university stuff just for fun, just for the pleasure of learning something new and showing others what we have learned. FAF was like a second family of awesome people that you wanted to stand upon because you were a part of something bigger, the SWAT team that can solve anything when everybody else fails. So, yeah, FAF was incredible."

STANISLAV SPATARI, FAF-151
Senior Software Engineer @Goodleap LLC



"Not many know, but I didn't code before university. So I learned engineering at FAF (and found most of my best friends here). Besides base courses, we did many extracurricular activities like participating in hackathons, working on side projects, and joining the "BEST" student organization, Google Summer of Code. We were helping each other grow while having fun. FAF community and the opportunities that it brought were the cornerstones of my professional education."

ALEX TRUHIN (BUMBU), FAF-081

Senior Front-End Engineer @META, Washington, USA

P.S Alex has been actively promoting the activity of the Female Students in Engineering League.

"University years are a great time, FAF made it even better. At FAF I learned coding having no prior experience in software engineering and got exposed to several key technologies that helped me propel my career. Most importantly I made life-long close friends. Previously held jobs at Amazon and a London start-up."

ANA BALICA, FAF-101

*Senior Software Engineer @META,
Seattle, Washington, USA*





"TUM is a uniquely great and essential place that launched me into a successful tech career. The combination of a great staff and vibrant student community nurtured my curiosity and aspirations.

It shaped me into a professional that enabled me to succeed in companies such as Amazon and Facebook. Now, at Facebook, the UK London office, I help to build a platform that defends the integrity of the community by taking down harmful content off the platform at scale."

SERGIU TERMAN, FAF-111
*Software engineer @META,
London, United Kingdom*

"TUM gave me an excellent start in my career. The courses proved to be extremely useful at my current job and I am happy that I followed the advice of my seniors to be prudent at the labs. Combined with the yearly FAF Hackathons, I gathered enough experience to participate in a few summer studentships in Brasov and Geneva. These experiences helped me get my first job and then receive an offer to work at CERN in Switzerland."

EMIL TERMAN, FAF-161
*Software engineer @CERN,
Switzerland*





"Joining FAF was one of the most life-changing decisions I've ever made. First, by studying in English I managed to level up my language proficiency, which is a must in the IT industry. Secondly, I've had the opportunity to join a very well-structured academic programme, which enabled me to build a strong foundation in IT and programming fundamentals, which also helped me get a job in the industry faster. Additionally, as a FAF student, I've had the opportunity to join an International Exchange Program with Erasmus+, during which I completed my 6th semester at a Spanish university. Last but not least, FAF welcomed me into a great community of people, who help and support each other.

At FAF I was encouraged and supported in doing great things, such as organizing or participating in extracurricular Lectures, Hackathons, Tech-Conferences, and even founding an NGO around the community. Upon graduation, the experience gained as a FAF student enabled me to follow a Master's degree in Germany, which was fully funded by the German Academic Exchange Service (DAAD - Deutscher Akademischer Austauschdienst). For me, FAF is more than an academic program - it is an environment of great-minded people, who dare to dream big, challenge the status quo, and take responsibility for building the future!"

DIANA ARTIOM, FAF-141

Data & Machine Learning Consultant

@Data Reply, Germany



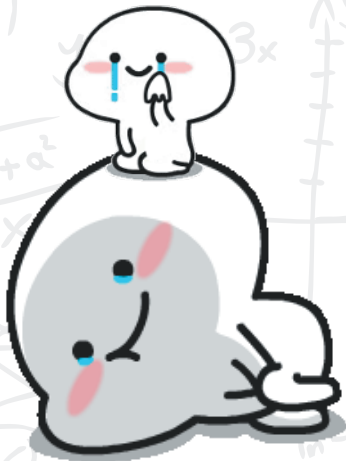
"After completing my secondary education in Turkey, I went on to the Technical University of Moldova to extend my studies. I first learned about FAF through my colleagues, who were in their second and third years of FAF. They had happy memories of FAF and admired how enjoyable, personal, and international the environment was on campus. I am grateful to the University for providing me with so many possibilities to further develop my talents that may be used in a variety of fields.

Unlike other students from previous years, my experience at FAF was unique. Moving forward, I began working on a start-up project shortly after graduation, holding positions as a mobile application developer and, later, project manager. All of my experiences gained through FAF assisted me in quickly improving my skills, and I received a very good job offer from Huawei Romania. The entire FAF community has been very helpful, especially as a foreign student, I was not able to understand some learning methods, however, both alumni & colleagues helped me go through all of the difficulties. Also, the best part of FAF was the education system, it wasn't related to memorizing the course, academic staff and their teaching methods were based on a practical approach. Thank you, TUM! Thank you, FAF!"

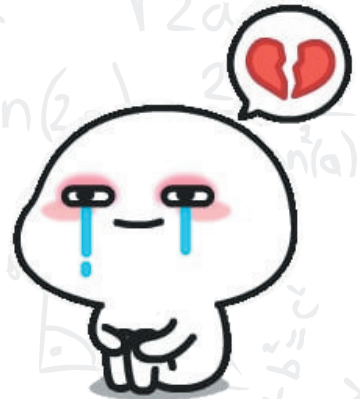
SEZER AKSOY, FAF-151

*IT Engineer @Huawei,
Romania*

If they reach IT!



$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$



2019

FAF-191



FAF-192



FAF-193



2020

FAF-201



2022

FAF-201



2020

FAF-202



2022

FAF-202



2020

FAF-203



2022

FAF-203



FAF-211



FAF-212



FAF-213



ADMISSION PROCEDURE



RADU MELNIC

Univ. lect.
Head of *Career Planning
& Development Center*,
Responsible Secretary
Admission Office

The offline registration takes place at the Office of Admission, located in the Rascani Campus, 9/9 Studentilor St., phone no. +37360302052, +37360302053, +37360302054, +37360302055.

Candidates for Software Engineering (Honours Degree) must meet the following requirements:

- Hold a Bacalaureate / College Diploma
- Pass the Maths Admission Exam
- Pass the English Admission Test.

The calendar with the exams dates and other details can be accessed at:

<https://admitere.utm.md/licenta/calendar-admitere/>

NB!

Applicants who own English Proficiency Certificates such as *TOEFL*, *Cambridge*, or *IELTS* (the International English Language Testing System) **are exempted** from the English test according to the regulations of the Ministry of Education and Research, the Republic of Moldova.

For more information about admission procedures and requirements, please refer to:

<https://admitere.utm.md> or admiterea@adm.utm.md



PROBLEM-BASED LEARNING, A NEW LEARNING CONTEXT AT FCIM

In 2017, Problem-Based Learning was introduced in engineering education under the Erasmus+ project 561884-EPP-1-2015-1-DK-EPPKA2-CBHE-JP *"Introducing Problem Based Learning in Moldova: Toward Enhancing Students' Competitiveness and Employability"*.

Having as the project coordinator, Dr. Romeo V. Turcan, Associate Professor of International Business and Entrepreneurship from Aalborg University, Denmark and Univ. Prof. Larisa Bugaian, the national coordinator from the Technical University of Moldova, PBLMD aimed to improve the quality of teaching and learning methodologies and higher education programmes in Moldova.



The launching of the Software Engineering Study Programme aims to embrace a synergy between minds-on and hands-on approaches, meant to fully engage students in the learning experiences.

PBL enables engineering students to discover real-life issues and to practise engineering problem-solving in a variety of settings. To fulfil course and programme requirements, we have also built creative and collaborative environments that immerse students in deep learning.

Research problem

The PBL paradigm has been adopted as an instructional strategy based on teamwork, where real-life problems are identified and analyzed by small groups of students trying to identify life issues and work out viable solutions.

This worldwide practice aims to help students sharpen critical thinking along with enhanced motivation and shared responsibility, considered essential abilities for life-long learning and the only way to survive in this highly digitalized era.



Through this form of collaborative learning, the Technical University of Moldova encourages students to engage actively in the learning process and skill acquisition. In this framework, they are allowed to explore real-life problems, analyze them from different perspectives, apply knowledge to practice, collect relevant data, discover and provide various solutions. Each semester, new groups, normally not exceeding 5 members, are formed by the PBL coordinator together with mentors and semester coordinators. Of course, special attention is paid to group heterogeneity, considering factors such as academic achievements, practical skills, gender, etc.



Moreover, students' perspectives and wishes are also taken into account in group formation. The purpose of teamwork comes to encourage learners' interaction through communication and exchange of ideas leading to a stimulation of their thinking process. While working together, the students strive to achieve successful learning outcomes by completing sets of tasks that are eventually turned into a project. The projects developed by the PBL teams range from Conceptual Development of an IT App (semester I) to Building a Secure IT App (license project, semester VIII), representing the acquisition of knowledge and skills along their bachelor's degree.

In implementing PBL, the role of the teacher shifts from a traditional sender of facts and concepts into a *mentor* who would rather facilitate and supervise the learning process and knowledge acquisition. In this setting the study process switches from a teacher-centered to a student-driven one, where mentors will offer students room to identify real-life problems, guiding them to change the world by shaping various viable solutions. Mentors also accompany teams of learners in their endeavours to succeed, teaching them to learn how to learn.

Since engineers are people who design and create the future, inevitably, it involves solving the technical problems humanity faces. For this reason, the university is constantly working on improving learners' skills on how to apply theoretical knowledge when solving real-life problems.

We assume that Problem-Based Learning will soon become a natural choice, if not an imperative, for the entire engineering education!





"Tell me and I will forget;
Teach me and I may remember;
Involve me and I will learn!"

- Benjamin Franklin



IF YOU WANT TO GO FAST,
GO ALONE;



IF YOU WANT TO GO FAR,
GO TOGETHER.

African proverb



SOFTWARE ENGINEERING, AN INNOVATIVE PROGRAMME AT DISA



ION FIODOROV

Associate Professor, PhD.
Head of the *Department
of Software Engineering
and Automation*

In the 21st century, the advances in technology emphasize the importance of rethinking the teaching-learning paradigm so that students become well equipped with a full set of competencies to enter the workforce market. The industry requires workers who can think creatively, solve real-life problems, and make immediate decisions. Moreover, engineers do not work alone anymore; complex projects require cooperation and teamwork.

To keep up with these dynamic changes and to align with the needs of the labour market, the previously English-Taught Honours Programme in Computer Science (FAF, Anglophone Department) was redesigned in 2017 in Software Engineering. Being complimented by Problem-Based Learning (PBL), a modern pedagogical framework, it has immediately become popular.

The Software Engineering study programme following the PBL approach encourages students to take the lead in their professional training and education. In this learning context, the individuals are encouraged to move beyond a passive role and get exposed to real-life problems, and develop efficient solutions.



SOFTWARE ENGINEERING: PROGRAMME SPECIFICATIONS



MARIANA CATRUC
Univ. lect.
Head of *Software Engineering*
study programme
(2019-2022)

The Bachelor Degree in Software Engineering is offered only on a full-time basis with a duration of study of 4 years. The curriculum is planned based on a 2-semester session per academic year.

Software Engineering (SE) is a branch of Computer Science that includes software development and all aspects of information processing.

The programme is meant to teach students to solve specific problems related to the organization of human activities. It also focuses more on educating outstanding specialists whose mission would be to design and develop software systems, therefore their learning process includes more practical tasks and problem-solving.

The programme is offering a wide range of field-related theories. It also follows the procedures for applying information with a specific purpose in the design, construction, and use of IT products and services. Software Engineering graduates are usually expected to work as System Analysts, Software Designers, Web and Multimedia System Designers, Application Programmers, Software Architects etc. However, taking into account the competencies developed by the SE programme, some other employment opportunities include vacancies for professors, researchers, directors, and managers of different levels.



YEAR I, SEMESTER 1

CALCULUS 1

This course develops, deepens, and extends the mathematical skills that will become the basis for many other courses. Throughout this course, students deal with calculus and principles of mathematical analysis including topics on functions of single and multiple variables. The functional relationships, the theory of limits, and the concept of differentiation, whether as theories or as applications, are discussed.

MATHEMATICS FOR COMPUTER SCIENCE 1

The aim of this course is to offer concepts and notations from Discrete Maths which are useful in studying and describing objects and problems in branches of Computer Science, such as computer algorithms, proving theorems in the theory of computation languages, cryptography, and software development. Each topic of this course involves real-life examples and implementations which are very important for a Software Engineer.

LINEAR ALGEBRA & ANALYTIC GEOMETRY

This module is meant to extend basic knowledge in mathematics and to strengthen it by covering two areas: Linear Algebra and Analytical Geometry. Each part of the course contains definitions of mathematical concepts, new mathematical terms, many useful examples, exercises, and their solutions.

APPLIED STATISTICS & PROBABILITY

This course gives an introduction to probability and the basics of applied statistics and not only. It will cover topics from Discrete and Continuous Probability, Combinatorics, Statistics, Random Processes, and Information Theory. Upon completion of this course, students will understand and have the ability to apply special models, methods, and tools to analyze problems and data with an uncertainty component. Probability in a complex world becomes an important part of scientific literacy together with Maths, Physics, or Computer Science.

YEAR I, SEMESTER 1

COMPUTER PROGRAMMING

In this course, students will learn about the fundamentals of Computer Science and basic programming. Here, the learners will also acquire both theoretical and practical skills that will be used in programming on a frequent basis. No prior programming knowledge is needed. Starting from the first principles of programming, students will receive a foundation in coding focusing on C/C++ and will be able to develop their first applications.

ENGLISH LANGUAGE 1-2

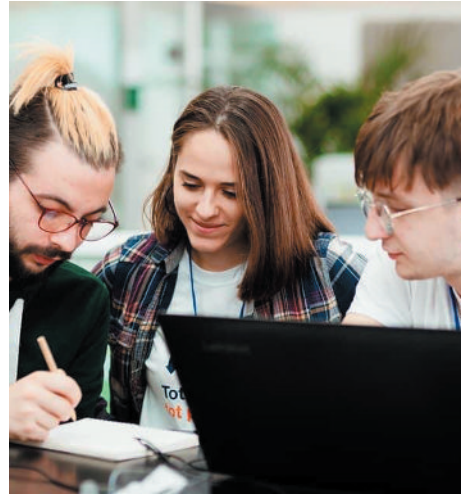
The practical aspect of the course is focused on non-native speakers of English to teach them how to effectively create formal documents and communicate properly various information. The focus of the course is on speaking and writing English using Computer Science as the working topic area.

ETHICS & ACADEMIC INTEGRITY

The aim of the course is to explore some of the basic theories, models, and concepts in the fields of ethics. You will learn about changing societal demands and expectations of media creation and media use. After completing this course, you will be able to reflect on ethical dilemmas and develop a well-substantiated argumentation for ethical decision-making in a variety of media-related contexts.

PHYSICAL EDUCATION 1-4

In this practical course, students will be introduced to activities designed to fulfill the physical activity recommendations for a healthy body, during which, students will practice diverse forms of exercise at our stadium, sports hall, and gym. The purpose of this course is to understand the benefits of regular exercise for one's mental and physical health.





CONCEPTUAL DESIGN OF AN IT APPLICATION

PBL PROJECT 1

In the first PBL project, students learn how to identify real-life problems that our society is struggling with. It also encourages students to formulate and provide solutions through the development of different models and from various perspectives, students can also provide solutions to several application areas using software engineering methods integrating ethical, social, legal, and economic aspects. The interesting part begins when the team members start working on an IT solution that will solve these issues.

When developing this project, students will learn how to lead market research and add features to their own applications. Even though this is just a concept of an IT app, it represents the basics of a successful application starts with.

The Conceptual Design of an IT App aims to find acceptable solutions, match the objectives of the project, take into account costs, time, and knowledge, but also the existing systems on the market.



Conceptual design is the part of the design process where solutions are developed by:

- identifying essential problems through abstraction;
- establishing functional and non-functional requirements;
- looking for the most suitable working principles;
- combining different solutions to make the app attractive.

YEAR I, SEMESTER 2

MATHEMATICS FOR COMPUTER SCIENCE 2

The emphasis of the Mathematics for Computer Science course is on the detailed understanding of mathematical definitions and proofs as well as applicable methods. This course covers elementary Discrete Mathematics for Computer Science and engineering. Therefore, the focus is on gaining a good understanding of the idea of "approximation" and "error" in all areas of life, acquiring numerical modeling skills for concise problems proposed in different fields, and knowing the basic programming methods in order to apply the knowledge gained in this course for identification and solving various application problems.

APPLIED SCIENCES

This course describes the art or science of applying scientific knowledge to practical problems. The main objectives of Applied Sciences are to develop the skill of mathematical modeling of different systems or mechanical phenomena, to learn how to solve typical problems from different compartments of mechanics, and to be able to deal with problems that can arise in engineering practices.

DATA STRUCTURES & ALGORITHMS

Data Structures and Algorithms discipline is about algorithmic techniques for solving various computational problems and finding programmatic ways of storing data so that it can be used efficiently. The essential themes of this course are data structures and files, data sorting methods, dynamic applications, and optimal solution search algorithms. After mastering this course, the student will be able to understand and use the algorithms and file processing. Students will also learn how to apply operating procedures with dynamic applications in a suitable manner.

CALCULUS 2

This course represents the abstract science of number, quantity, and space, either as abstract concepts (pure mathematics) or as applied to other disciplines such as physics and engineering (Applied Mathematics). Within this discipline, students will acquire knowledge foundations of probability and graph theory, mathematical logic, and Boolean Algebra. Also, they will acquire competencies to process the received information to solve practical problems, learn mathematical modeling techniques and use them to represent various phenomena specifically for engineering sciences.

YEAR I, SEMESTER 2

COMMUNICATION & ACADEMIC WRITING

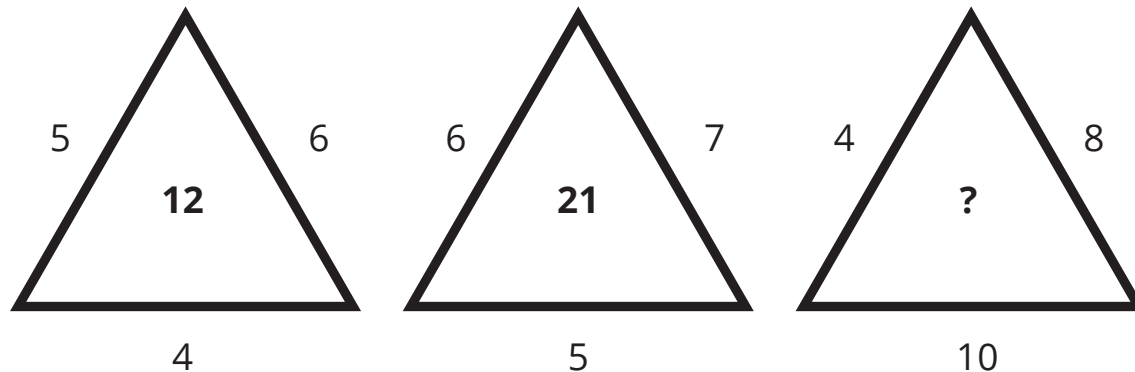
CAW is a 3 ECTS course consisting of 2 modules: Communication & Academic Writing. It is designed to give a very head start on the main elements of public speaking, verbal, non-verbal & para-verbal communication. It will provide key techniques, guidelines, and suggestions to improve academic written communication. It will give hands-on experience in drafting, an academic text.

NUMERICAL METHODS

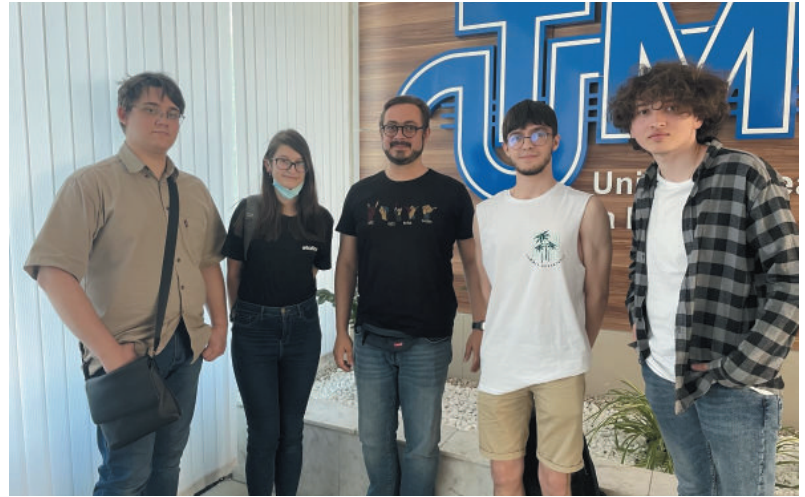
The main objective is to have a clear understanding of the ideas and techniques underlying the numerical and optimization methods, results, and algorithms that will be presented, where error analysis plays an important role. As a result, students will be able to use this knowledge to analyze the numerical methods and algorithms that they will encounter, and also to program them effectively on a computer.

BRAIN TEASER

What number should replace the question mark?



The answer is hidden somewhere here :)





PBL PROJECT 2

The Equivalent Models course reflects the art of translating problems from an application area into tractable mathematical formulations where theoretical and numerical analysis provide insights, answers, and useful guidance to develop an application.

The mathematical model of a process is created by defining a set of relationships between specific physical variables in a form of mathematical structures such as algebraic equations, differential equations, or systems of differential equations. Thus, by determining an equivalent mathematical model of a process, the aim is to obtain a quantitative characterization of its operation as close as possible to reality. The representation of a physical process through a mathematical model has become a necessity for the design of technological installations, the study of the behavior of a physical process under the action of various triggers, or for the regulation and optimization of the operating mode.



A major objective of Equivalent Models is to make the students learn the basics of mathematical modeling of systems/processes, data acquisitions, monitoring, and designing of systems/processes. Also, students will gain an understanding of the fundamentals of automation, methods of modeling, simulation, identification, and analysis of processes. However, it is vital to use gained knowledge in order to achieve the main goal of this course, namely to create a precise mathematical model of a real given system.

YEAR II, SEMESTER 3

OBJECT ORIENTED PROGRAMMING

The course aims to familiarize the students with OOP concepts, like abstraction, encapsulation, and inheritance, help them work with C++ and Java logic elements, and build programs. The objectives of this course are solving practical problems through the elaboration of OOP programs, familiarizing students with some programming languages meant for object-oriented practices, the definition of concepts, algorithms, and the development of scalable applications.

DATABASES

This main objectives of the course are to familiarize and teach students how to work with databases, how to apply them to practice, and how to correctly construct a database. The main topics are related to understanding and practicing SQL queries, implementation of interrogation algorithms, optimization of a database structure, and management of a database security system.

INTELLECTUAL PROPERTY LAW

In this course students will explore the fundamental features of trademarks, copyrights, trade secrecy, and patents, emphasizing their particular strategic benefits and pitfalls. They will align specific applications of IP law with the goals of their studies, business, organization, or team, and acquire strategies to protect their hard work. Through this course, students will have opportunities to expand on these teachings in practical, relevant ways, such as anticipating potential issues with trademarks and copyrights or promoting innovation.


SYSTEM ANALYSIS & MODELLING

The purpose of this course is for students to become familiar with the elements and principles of software development, to learn algorithms, methods, and modeling techniques based on modern UML modeling languages, and to understand and be able to apply the knowledge gained in practice to solving IT problems.

The laboratory works related to this discipline are carried out with the help of the Enterprise Architect modeling tool.

COMPUTER GRAPHICS

These classes get the students accustomed to the fundamental concepts of 2D and 3D graphics as important components of image processing. The main objective of this course is the theoretical and practical usage of computer graphics algorithms, the practice of geometric transformations, synthesis of highly realistic images. Students will learn from scratch to visualize objects in 2D and 3D using mathematical concepts.



BASICS OF APPLICATION DEVELOPMENT

PRODUCTION INTERNSHIP

PBL PROJECT 3

This semester project aims to make students understand the basics of application development and how to successfully implement them. The plan of action is intuitively simple. First of all, understanding the problem and researching the market will help find technical requirements. Then, it is time to code and lay the groundwork for future applications. With the help of qualified mentors, the team will present fully functional Web, Android, or iOS applications. One of the most important aspects of this project is the interaction between a user, computer, and any other device.



The main objectives of the projects are the following:

- identifying and defining the concepts, procedures, and methods of information processing used in making applications for the needs of human activity;
- explaining the appropriate technologies for making applications necessary in the activities of organizations;
- using modern technologies in developing software applications.

YEAR II, SEMESTER 4

ALGORITHM ANALYSIS

This course provides an introduction to pseudocode, analysis of algorithms, worst/best case time execution of an algorithm, general concepts about asymptotic complexity and NP-completeness, and the P versus NP problem. During this course, you will learn to determine the complexity of algorithms and find the most optimal algorithm to use for a particular problem, and take into account factors that will help to make the right decision. It also offers techniques for algorithm design.

COMPUTER ARCHITECTURE

The Computer Architecture course is about how hardware and software technologies interact to create a computer platform or system. It provides knowledge about computer architecture and the location and importance of every architectural element. Also, students learn about methods and techniques for representing numbers in a computer and about basic algorithms for performing binary arithmetic operations. The long-term objective is to ensure the ability to design complex computing architectures and systems.

MULTIMEDIA TECHNOLOGIES

The Multimedia Technologies course is aimed at advanced training in information technology used in distributed multimedia communication systems, including both signal processing of any type (text, hypertext, images, audio, video, 3D video) and their recognition. Emphasis is laid on analysis, synthesis, and scientific processes, but also on bringing more knowledge through research and application development during laboratory works.

COMPUTER NETWORKS

The purpose of this discipline is to understand how computers communicate with each other. The concepts of IP addressing, basic Ethernet elements, and switches are taught. Students learn to construct and configure basic Ethernet networks using routers and switches and get acquainted with IPv4/IPv6. The main objectives are understanding and describing the network protocols, understanding the fundamental concepts of Ethernet-like media, services, and their work process, learning the usage of computer network tools for verification of small infrastructures, and analysis of data traffic.

FORMAL LANGUAGES & AUTOMATA

The main objective of this course is to teach the principles of application in the practice of various formal languages, programming languages, methods, and techniques for formulating calculation models and modeling different phenomena and technical processes. At the end of this course, you will possess knowledge of grammars, languages, and automata of various types.



DEVELOPMENT OF DOMAIN-SPECIFIC LANGUAGES

PBL PROJECT 4

This course is focused on the design and implementation of a new programming language, namely Domain-Specific Language (DSL) — a language specifically designed to work within particular areas or domains (e.g. calculus, sound processing, query a database, image processing), in the text-based or graphical implementation. The main goal of DSL is to raise the level of abstraction of the language to a particular domain and the course introduces DSL techniques and explores approaches on how to implement such languages in practice.



The main objectives of the project are:

- domain analysis and problem identification;
- exploration of a wide variety of high-level language-implementation techniques;
- development of the domain-specific languages.

YEAR III, SEMESTER 5

SOFTWARE DESIGN MECHANISMS & TECHNIQUES

In this course, we aim to identify the main principles, best practices, and common solutions when it comes to software design. Having knowledge of the techniques and mechanisms involved in the design phase, the students will have a better view of how a software project should be structured and also how the existing software development frameworks work in the background. A good design needs not to enforce any limitations, but rather to act as a guideline for the development phase.

OPERATING SYSTEMS

The operating system is the most important representative of system program resources. An operating system is the main intermediary between the computing system and the user. At the same time, the operating system manages the resources of the computer system, ensures security, etc. Knowledge and exploitation of the possibilities of operating systems are mandatory for any specialist in the field of information technology.

PHILOSOPHY & CRITICAL THINKING

The course aims to provide not only general information about the evolution of human thinking but also to guide the student's reflection on philosophical and scientific systems of all times. In this way, the need for the emergence of new intellectual patterns in the current cultural environment will be covered. Students will be encouraged to promote their own points of view deeply justified in a constructive dialogue, in which notions, theses, and principles are critically researched.

NETWORK PROGRAMMING

Network programming course is the first part of a 3-course long study of the design of modern networked systems. Network programming covers such topics as low-level concurrency and its classic problems, also network protocols and their design. The practical projects within this course are aimed at developing not only discipline-specific skills, like working with threads and sockets, but also more transferable software engineering skills, like writing modular and clean code, with multiple levels of abstraction, and split into multiple sub-components.

CRYPTOGRAPHY & SECURITY

The Cryptography & Security course provides a unique blend of cutting-edge research and practical skills. It is aimed at obtaining knowledge about security, audit, control, and data integrity in all sectors - industry, commerce, and academic environment. Recognized worldwide as the primary source of reference for applied research and technical expertise, it is the first step to help you create fully secured systems.



SECURE APPLICATION DEVELOPMENT

TECHNOLOGY INTERNSHIP

PBL PROJECT 5

The DSA PBL Project aims to develop an application while approaching security at all stages of the development process. At first, students have to analyze the flow of sensitive data in their application and perform threat modeling to detect possible threats and vulnerabilities. Next, they implement their application while combating the detected threats and following community best practices. As a result, students deliver a well-secured application to solve a problem in society.



The main objectives of the project:

- challenging students to understand courses' concepts on a deeper level;
- pushing students to make decisions they're able to defend;
- encouraging students to work as a group to solve the complex issue at hand;
- engaging students to solve an open-ended problem in multiple complex stages.

YEAR III, SEMESTER 6

EMBEDDED SYSTEMS

This course studies the aspects of structure and functionality of an Embedded System, from the perspective of generic architecture. In order to make various applications, the components of a system will be analyzed, such as user interaction, sensors, actuators, diagnosis, control, processing, and communication. Students will learn to create different kinds of embedded systems through the completion of exciting laboratory works. Electronic Design Software like Proteus Design Suite will be used for electronic design. Writing code and running it on Arduino microcontrollers will provide a real-life experience of embedded systems in action.

ENTREPRENEURSHIP

The European Commission first referred to the importance of entrepreneurship education in 2003, in the European Green Paper on Entrepreneurship in Europe. According to the newest documents elaborated by UE, entrepreneurship remains one of the key competencies for lifelong learning. The aim of the academic course "Digital entrepreneurship" is to develop entrepreneurship skills to transform ideas and opportunities into action by mobilizing resources. It was designed to cover 3 main areas: 'Ideas and opportunities', 'Resources' and 'Into Action'.

HUMAN SECURITY & SUSTAINABLE DEVELOPMENT

The course will provide insights into the human security approach and how to apply it to the development of policies and programs that are better suited to prevent and respond to complex challenges. Students will explore some of the key issues in sustainability, tackling the big questions with examples from around the world.

WEB PROGRAMMING

The course will provide a perspective on the development of web technologies, as well as on this field's direction of evolution, and what the benchmarks show in the upcoming years. By understanding these basics, students will be able to apply the knowledge in practice, when creating applications and web services. Moreover, the course analyses the architectural and programming requirements specific to modern web platforms, providing the information necessary to apply the various studied concepts for the design of applications, also for the development of mechanisms to a narrower range in implementation.

SIGNAL PROCESSING

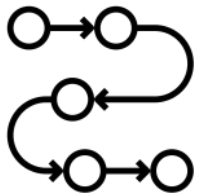
The course is presenting theoretical and practical aspects of formal languages, automata, and methods of projecting and implementing compilers. In order to develop a user interface, students will learn a variety of methods that are using a complexity of programming languages. The aim of this course is to gain knowledge of writing compiler problems, which is one of the main technologies in developing integrated programming systems, interfaces, natural language applications, and automatic control systems.



INTERNET OF THINGS

PBL PROJECT 6

Internet of Things (IoT) is an advanced technology that defines networks made up of objects with the capability of transmitting data via cable or wireless technologies. Beyond improving the quality of life, the Internet of Things has major applicability at the corporate level. It allows organizations to collect and analyze data from a multitude of sensors on production equipment, pipelines, weather stations, smart meters, delivery trucks, and other types of cars, etc. The realization of IoT projects involves equipping the devices with network sensors so that they can be connected and work together, as well as the technical teams that have the ability to interpret the results gathered with the help of sensors and deliver to customers intelligent dashboards, personalized reports, alerts when peaks in measurements as well as suggestions for improvement.



The main objectives of the projects:

- processing the received information from the sensors;
- understanding the work of the wide variety of sensors with actuators;
- building a secure software and hardware system.

YEAR IV, SEMESTER 7

DISTRIBUTED APPLICATION PROGRAMMING

The course is aimed at combining knowledge from different areas of computer science and software engineering that students got throughout the years and putting it to the task of designing and programming scalable, reliable, and robust systems capable of working in multi-machine environments connected by a network.

The course touches both practical and more fundamental aspects of distributed systems, from microservices architecture and its components to problems like distributed consensus and data consistency. The projects within the course are designed to foster teamwork and tackle big, multiservice systems with consistency and delivery guarantees.

ANALYSIS & SPECIFICATION OF SOFTWARE REQUIREMENTS

This course focuses on requirements management, in order to ensure the quality of software products from the early stages of development. It explains how requirements influence product quality and cost by reducing the cost of change. All aspects related to requirements management will be addressed - elicitation, specification, validation, modeling, and prioritization. Particular emphasis is placed on the most commonly used software development lifecycle models for software development and their differences in quality management and requirements. In addition, methods of managing stakeholders will be discussed during all stages of requirements management.

GAME DEVELOPMENT FUNDAMENTALS

During this course, students will obtain the skills needed to design and develop basic AR and VR games. The course focuses on both the theory and practice of game-making. Students will be taught the latest practices, techniques, and tricks in game development allowing them to make motion graphics come alive.

ARTIFICIAL INTELLIGENCE FUNDAMENTALS

In this class, you will learn about the underlying magic (maths and statistics) of Machine Learning, as well as the tools and best approaches for solving all kinds of AI problems (such as classification, regression, clustering, or computer vision). It will provide a general understanding of AI history and its concepts, as well as a basis for further research on the topic of ML and Artificial Intelligence.



INFORMATION SYSTEM DESIGN

PBL PROJECT 7

The last PBL project within the Software Engineering study programme focuses on the analysis, specification, and design of a large-scale project that subsequently will result in a student's graduation paper. During this project teams of 2-3 people are working towards clearly defining functional and non-functional requirements of the systems, trying to build, design and architecture them according to the rigors of modern software engineering.



The project aims at leveling up the design and analysis skills of the students, which are a staple of a true software engineer. Within the project, students also have a great chance to exercise project management and philosophies on non-textbook projects from different perspectives.

YEAR IV, SEMESTER 8

SOFTWARE PROJECT MANAGEMENT

It is a well-known fact that understanding and applying sound principles of project management in designing and developing any software product, irrespective of the programming language used (.Net, Java, C++, Python, etc), allows companies not only to save a substantial portion of budget but most importantly build the right product for the right target group. The complexity of modern software products has been increasing steadily along with the fact that more and more IT development work has been outsourced globally, thus requiring a very skillful approach in managing effectively project constraints to reach the optimal results for all parties involved, ranging from the software end-users, project sponsors to the development team.

SOFTWARE QUALITY

This course is focused on describing the following core ideas: basic terminology in software quality, what software product and software product quality represent; the consumer's perspective on the fundamental aspects of software quality; the concept of a software error, its types, and roots; learning the factors that ensure software quality (factor and sub-factor models); what are Quality Assurance System and its objectives; what are the components of a Software Quality Assurance System; integration of the Quality Assurance System in the software development process; product Development plan and Product Quality plan, the review process; Software testing strategies, implementation of software testing.

LICENSE INTERNSHIP

The license internship offers the opportunity for students to be guided by professionals from IT companies to identify the right tools on the market and master the required skills to develop the research paper. Students will gain valuable experience and sharpen their abilities while working on projects to solve real-life issues.

To graduate from TUM, students must:

- complete the graduation requirements of the programme and attain a total of not less than 240 credit hours (ECTS);
- pass the license examination;
- defend & submit the Bachelor's thesis.

LICENSE EXAM

The license examination represents the final evaluation designed to test whether the learning outcomes required by the degree programme have been achieved. It encompasses a review of the course units covered during the degree. Prior to the final examination period, students have a week of intense revision and study known as consultation week.

BACHELOR'S THESIS

A bachelor's thesis is a public written work that is counted towards a bachelor's degree and explores a narrowly focused research problem. The preparation of a Bachelor's thesis is an intense and complex period that involves the search and review of literature, empirical research and writing. It is considered to be the most responsible stage of the Bachelor's degree programme. The students write the Bachelor's thesis independently, under the guidance of a supervisor and in accordance with the procedures for writing, design and documentation reflected in the Methodological Guidelines for Writing Bachelor's thesis.

DIPLOMA AWARDING

Graduates will be awarded an official certificate, called a 'diploma', confirming their general field of studies, professional training field, and study programme. It will carry the University name, and the signatures of the President of the Committee, the Rector, and the Dean.

The diploma supplement includes a transcript of modules/courses taken, ECTS, No. of hours, and marks achieved. Being also a legal document, a single copy is provided free as part of your diploma. The formal graduation ceremony is usually held in July, where our graduates are invited together with family and friends to get their diplomas.

MASTER'S PROGRAMME IN SOFTWARE ENGINEERING

Semester 1

Exploratory Data Analysis

Machine Learning and Data Mining

Cloud Architectures

Data Analysis and Visualization

Software Systems Architecture

PBL Project 1



Semester 2

Cryptanalysis Techniques and Methods /
Intelligent Agent Systems

Cloud-Native Applications

Modelling in Virtual Environments

Neural Networks and Deep Learning

PBL Project 2



Semester 3

Research Internship

Master Thesis Elaboration & Defence



EXPLORING INTERNSHIP OPPORTUNITIES



GABRIEL ZAHARIA
Univ. assistant
Head of *Software Engineering*
study programme
(2021-2022)

The Internship Programmes are considered exciting platforms to kick-start students' careers in IT, consolidate their knowledge and develop new skills.

Being a student allows you to apply for internships provided by our partners – IT companies and organizations from our country.

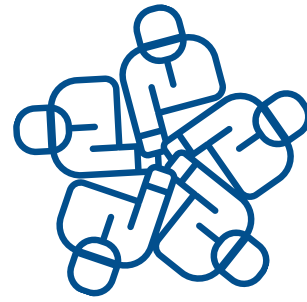
The Bachelor's Degree offers 3 internship programmes available for students of the 2nd year (Production Internship), 3rd year (Technology Internship), and the 4th year (License Internship), 240 hours per semester each.

An internship offers excellent opportunities to improve technical and soft skills and gain valuable practical experience, professional development, hands-on training, and networking opportunities with experts in different fields.

Quite often, internships represent the perfect opportunity for students to get part-time employment, as well as full-time, after graduation.



OUR VALUABLE PARTNERS



"PBL has definitely changed the concept of collaborative learning. It's a truly unique experience that gives students the chance to drive their business ideas, be creative, and engage in a real-life delivery process.

As part of this exercise, we share varieties of strategies and resources to help with every piece of the process - from defining responsibilities to managing tasks, to documenting the research findings and creating minimum viable products. It's demanding and challenging to steer the team to greatness, but at the same time, it's incredibly rewarding to be involved in shaping the early stages of young people's careers and invest in the future of the industry. It's all about a win-win collaboration, which should not be missing from the curriculum of each university."

"We are pleased to know that we can contribute to the education of young people in the field of Data Science, which, as a relatively new field, it is very important to be taught from the first years of university. TUM students are also given the opportunity to follow internships at Orange which becomes an advantage for young people pursuing a career in this field because they have the chance to live a unique experience right within the Data Science teams from Orange Moldova.

Here, they can watch and even contribute to the development of projects with the application of machine learning models and Big Data solutions. We even have instances of internships turning into employment contracts."





"A Software Development internship is all about gaining hands-on experience. You have the opportunity to learn both about technology and the business itself, to experience a real working environment – teamwork, meeting the deadlines – and enjoying the outcome of your work. Strong communication and time-management skills, as well as good knowledge of OOP, algorithmic skills and data structure, are key to succeeding in a software role."

"At GovPredict, hiring an intern is just like hiring a new employee. They all start as Juniors and we are committed to providing them a stable work environment with equal learning opportunities, improving technical skills, and personal growth.



It is our mission to develop an attitude of teamwork and quality and create an atmosphere that fosters challenges, fun, and safety. We are impressed by the students of the Technical University of Moldova that became part of our company. Their burning desire to learn and acquire professional habits, and their strive to achieve proficiency in IT, demonstrate that the knowledge background they received within the Technical University is of high quality.

We aim to continue the successful cooperation between GovPredict and The Technical University of Moldova, and we look forward to welcoming new talented team members."



"Collaborating with FAF comes as a challenge for the students and us. We need to make sure that we offer students the right challenges, and we want them to get as involved as possible. In discussions about soft skills, I discovered that the second-year students are quite mature and have a clear understanding of the disadvantages and advantages of their potential, their university, and the companies in which they would like to work. Our joint efforts will help provide clarity on how students can build a future. Our expectations of the most active students have been exceeded, and in them, we have seen future professionals, whom gladly we will wait in our team."



"For our company, the Technical University of Moldova has become an essential partner in an increasingly broad set of innovation activities. The internship programs we offer to IT students are meant to forge two entities: academia & industry to jointly develop new ideas and provide diverse environments, settings, and platforms to facilitate the learning experience through hands-on activities.

We constantly create different opportunities for our interns to learn new skills, gain valuable work experience and fulfill the university requirements. Also here we introduce undergraduates to many aspects of full-time employment while allowing them to explore their interests and form their personal career goals."

"The internship program is an amazing learning opportunity. Labs42 is pleased to mentor FAF students during their university years. We try to give all the workplace experience and valuable career advice to our mentees."



Pentalog 

"Involving students in the work environment within IT companies is a key factor in building useful skills and increasing employment opportunities. Pentalog is actively involved in training TUM students during their internships.

Some of our employees also teach different courses, others work as mentors for PBL projects where they share experiences about the implementation of a real project; teamwork participation in events organized by the company. We also organize team-building sessions meant to strengthen the team."



"The best part of being a FAF-er is the friendships you make, the amazing opportunities it gives, and the fact that it pushes you out of your comfort zone. You get the chance to feel the abroad learning experience, here, at home, through the Problem-Based Learning process that connects the learning environment with the production itself."

Valeria Dubina, FAF-203

"PBL has given us a lot of opportunities to grow, as developers, critical-thinkers, and problem-solvers. We got amazing internship opportunities, where we as FAF-ers got to experience a real IT environment. All in all, learning at FAF can open many doors for you, all you have to do is make your way to open them."

George Vragalev, FAF-203

"For me, FAF is like a family, it is a place where you always can find support, both academic and emotional. As a FAF student, you will have the chance to work in a PBL setting, in which you will deal with real-life problems, and solve them. During the process, you will make a lot of new friends, who might become your co-workers in the future."

Adrian Gherman, FAF-203

"Being a 2nd-year FAF-er, I got the opportunity to apply my knowledge in the internship in a company "Complexica". It was an amazing experience working with my colleagues and interacting with mentors, acquiring new information, and seeing how the stuff works in a team environment ."

Valentina Craevscaia, FAF-203



WHY JOIN FAF?



Patricia Capitan
FAF-201

"My initial plan had been to pursue my studies abroad but the pandemic ruined all my intentions which were very upsetting at the time. Having found out about the SE study program made me feel really happy, and enthusiastic about my future and immediately said to myself "I belong here". Frankly speaking, I think the fact that it's an English-taught program it's what firstly pulled me like a magnet to apply here. As time went by I managed to do a lot of digging to find out more about this opportunity and quickly realized I can benefit from high-quality education here just as I would have been able to do abroad. In the end, I successfully passed the entry exams in Mathematics and English. So here I am, happy and grateful for my "failure" which turned out to be one of my most amazing life choices."

"A couple of years ago I became interested in programming. Exploring this domain by taking different courses I decided to fulfil my greed for knowledge by continuing my studies in this field at TUM. Looking for a suitable degree, I came across Software Engineering, and I became pleasantly surprised not only by its curriculum but also by the opportunity to learn in English, so I applied to this program passing both Maths and English tests. I am grateful for being here at FAF because besides studying I got to know a lot of nice people who became my trusted friends."



Anastasia Iațco
FAF-202



Maria-Mădălina Ungureanu
FAF-203

"When looking for an opportunity to combine English with engineering, I was encouraged by people from FAF community to join them, and that's how I gathered up my courage to pass two admission tests: English and Maths and to be now part of the Software Engineering program. Now, I am here, at FAF, working with my fellows, trying to identify solutions to real-life problems."



Corina Sclifos
FAF-161

"FAF is more than a group of people, it is a community and a lifestyle. FAF helps you understand the real meaning of a student's life with all its ups and downs. Here you make friends with whom you grow and develop professionally and culturally. Noi facem ceva cu tolk!"

"FAF is more than just a community, it is a family with all its ups and downs. Studying here implies a lot of hard work and dedication. By being part of such a family, you are ensured in getting to know a lot of beautiful people willing to help whenever needed. The best part is that it does not end with graduation. I am proud to be a FAF-er."



Alina Gomeniuc
FAF-172

"FAF has given me a lot of possibilities, a lot of positive feelings and a lot of open doors. Here I have met a lot of interesting and determined people always ready to share with you their values. Almost everyday I feel like I gain new knowledge and I face new experiences that help me develop both personally and professionally. This has gone my expectations I had 3 years ago. I am very thankful to this community."



Andrei Leșco
FAF-182

"After 4 years, of holding my diploma, I can loudly point out my pride in graduating from FAF. At first, FAF meant to challenge. During, FAF - my elite family. In the end, FAF is me and I am FAF. FAF stands for friends and future. Once in FAF, forever FAF. Join us!"



Daniela Cojocari
FAF-161



Anișoara-Ionela Pleșca
FAF-182

"FAF is not just a place to learn software engineering but also a community of students where we share ideas and opportunities. It's the perfect place to discover internships and student experiences, such as the CERN Summer Student Program.

CERN (almost) stands for European Organization for Nuclear Research. If this doesn't ring a bell, maybe the Large Hadron Collider will. CERN is an out-of-this-world place. Here physicists and engineers gather to discuss and implement revolutionary ideas. These projects come with challenging software and hardware requirements, making CERN the perfect place to grow as a software engineer while contributing to the development of nuclear research.



Diana Gaponcic
FAF-181

We all joined CERN through the CERN Summer Student Program at different times since 2018. For us, the program was a mind-bending amalgam of experiences. We experienced everything from intense learning and tough technical challenges to knowing amazing people and having a magic time in Switzerland and France. We worked on impactful projects, met interesting people, and built beautiful memories.



Alexandru Burlacu
FAF-151

We also made sure to document the whole application process and different tips to help the next generations of FAF students fully benefit from this. Our tips are available for all FAF students. If you didn't get the hint yet, apply to FAF and find more details about this and other amazing opportunities just like it. One free tip for you, check out this internship preferably for the summer between the 3rd and 4th year of study."



Elizabet Grinciuc
FAF-172

"In my search for the perfect degree programme, I spent a lot of time searching through plenty of opportunities worldwide, visiting new cities, and imagining my life as a graduate. However, I have chosen to stay home and contribute to the creation of a better university environment here in Moldova. FAF has proved that I made the right choice 4 years ago. I have spent the best moments of my time at university in FAF, together with the coolest colleagues and professors."

"For me, FAF is a great opportunity to get "launched" in the IT industry. Here, you can make new friends who work or are going to work in this area, and I am talking specifically about teachers. We are blessed to have mentors who are younger than the usual teachers in Moldova and who resonate with our expectations. I consider this factor extremely important to me as a student because the knowledge I receive from them is always up to date and useful for a future successful career."



Victoria Belinschi
FAF-181



Iuliana Turcanu
FAF-181

"When I decided to stay in Moldova after graduating from school, I was afraid that the university will not meet my expectations. The first thing that attracted me is the admittance exams. Once there is a thorough selection of people who want to learn at an English-taught Honours Programme, it means hard work. An important thing I have learned here: you are not alone because there are several hundreds of FAF members who will support, encourage, and advise you. Also here I learned how important is teamwork in life. Making everything alone is impossible, but distributing tasks and building a group project is the key to success."

WHY GIVE BACK TO FAF?



Vasile Drumea
FAF-161
Software Engineer
@Urchin Systems,
PBL Mentor

"The university teaches us how to learn rather than make us proficient in one specific subject. It is well known that the best way to learn something, in particular, is to teach it. Thus, teaching at the university, I think it is a great opportunity to develop my skills and meanwhile to have a contribution to the development of aspiring engineers. Moreover, I had the chance to be an exchange student in Germany and this experience reinforced my will to contribute to the development of my home institution. For me, life without university would be boring. In my university years, I didn't have the opportunity to learn in a PBL environment, but now I have had the opportunity to learn a lot about this philosophy by mentoring young fellows, helping them to interact and develop complex projects that solve real-life problems."

"During my degree at the Technical University of Moldova, I had the happy opportunity to be taught by FAF graduates in some of the laboratory sessions. Later on, I understood that it was already a long-standing tradition here. I have found those courses the most useful, the most engaging, and the most impactful, due to the teachers' helpful insights and clear instructions on what and how we were supposed to improve our learning outcomes, and besides that, we received a lot of technical assistance from them. Having FAF graduates as instructors, challenged and motivated me to take the decision to contribute to this tradition so that FAF can continue being a community of achievers interested in software development.

I enjoy both sharing knowledge and learning new things because there is no better opportunity to combine that than to teach at the Technical University. Here, you disseminate what you have already learned, while still learning new things from the younger students."



Alexandr Vdovicenco
FAF-151
PBL Mentor



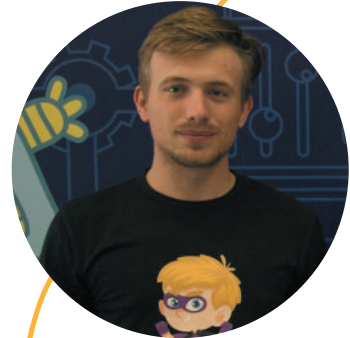
Cristofor Fiștic
FAF-171
PBL Mentor

"As a student, I benefited a lot from the interactions with the senior FAF-ers. They were our role models, helping with ideas, and resources, and some of them even became our teachers right after graduation. FAF community is a unique experience that I owe a lot, so in the later years of my study there I knew I could be useful and help others as well. Giving back to FAF community is my main drive to be a course instructor and a PBL mentor to the younger generations. I want to make them fully realize their potential through meaningful interactions within FAF community, for FAF is not about boring classes or grades, it is about human relations, traditions, and beautiful people."

"After 4 years of being a FAF student, I have realized that I don't want for me and this community to grow apart. Now I have finally the chance to give it something back, prolonging my activity here as a PBL mentor and Bachelor's thesis coordinator, and I can't be more thankful. The best of my accomplishments, memories, and friends I have made here, and I am truly happy this program is gaining recognition because taking this road, you'll have no regrets."

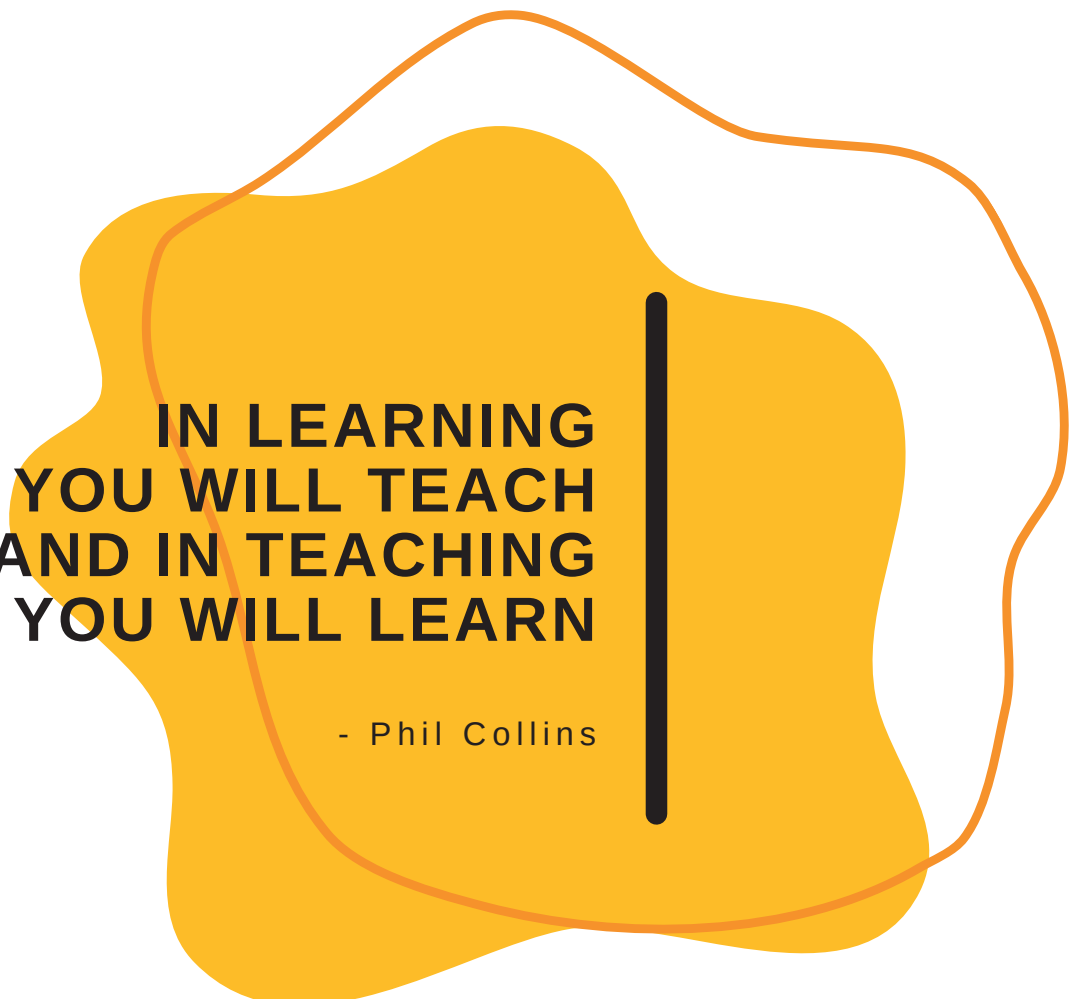
Mihail Gavrilița
FAF-131
PBL Mentor

"I have been teaching in FAF since 2017, right after I finished my undergraduate studies. During my studies, I found myself in the community that is FAF, and after graduation, I didn't feel like leaving it. Being involved in PBL as a mentor has allowed me to promote teamwork and problem solving - both prized in the community (besides partying ofc). I am proud of being one of FAF mentors."



Mihai Gaidău
FAF-161
PBL Mentor





**IN LEARNING
YOU WILL TEACH
AND IN TEACHING
YOU WILL LEARN**

- Phil Collins

ACADEMIC STAFF AS MENTORS

"The PBL framework in engineering education has brought a great contribution to the teaching-learning paradigm. Its real magic is that students become aware of the importance to learn how to learn, they also get the chance to find answers to why they have to study specific topics in different courses. It also offers a great opportunity for the learners to simulate a real-life process where students understand the feeling of a genuine engineer. Moreover, they learn how to ask the right questions during mentoring sessions, which makes us understand that they value our contribution to their personal & professional development. It is a real R&D process. The challenge of being a mentor, made me realize that I have started learning new things from the interaction with my disciples, especially when they ask questions that require some well-documented answers."



Andrei Bragarenco
Univ. lect.
PBL Semester
Coordinator



Elena Cojuhari
Associate Prof., PhD
PBL Semester
Coordinator

"As a radically different form of instruction, PBL presents challenges both for mentors and students. Nevertheless, it provides a range of significant benefits for students. By combining theoretical studies and applications, PBL provides an opportunity to see connections between different areas and different topics which are not obviously connected but might have the same theoretical basis. The learners are guided through problem formulation, analysis and, ultimately finding an efficient way to solve it. This process is similar to research work, where students are encouraged to consider several scientific resources which concentrate on the same issues. The consideration of a particular problem in this context can lead to broadening perceptions and perspectives. Working cooperatively in a team will inevitably lead to improved communication skills."



Irina Cojuhari
Associate Prof., PhD
PBL Semester
Coordinator

"Mentoring students in a Problem-Based Learning format has been a great experience for me. This model inspires and makes me look differently at the educational process where teachers interact a lot with small teams of students to solve real-life problems. It's a process that enhances cooperation and collaboration, where mentors together with team members get inspired to work and achieve more than in the traditional education."

"Mentoring experience in the PBL environment has been a challenge because of the implementation of an amazing pedagogical strategy. In working on the proposed projects, it was necessary to establish both the exact work plan for the upcoming semester, as well as the specific tasks and their distribution corresponding to each team member's skill background. What seemed to be simple at a first glance, turned out to require much more contribution from both me as a mentor and from the students. However, it was gratifying to note that, over time, team interaction has crystallized, and team members became aware of everybody's contribution and responsibility to a certain role. This fact allowed students to find the area of the project in which they feel more comfortable, more skilled, and more experienced.

This fact allowed students to find the area of the project in which they feel more comfortable, more skilled, and more experienced. In addition to the theoretical aspect, which involves the sharing of knowledge and assistance in the elaboration of the project, the mentor also carries a very important role of leader, mediator, and motivator, and I consider this an extremely important aspect in the realization of a successful project. The unexpected conditions caused by the pandemic have forced us to face major challenges. However, the responsibility and involvement of each member, the ingenuity, perseverance, and attitude of each student with whom I had the satisfaction of working brought very good results."



Ionel Sanduleac
Associate Prof., PhD
PBL Mentor

"Working in a PBL format was certainly a challenge both for me, as a teacher and a mentor, but also for the students who had to learn to collaborate and work in teams, identify and solve problems, think analytically, and analyze different problems from several perspectives. This experience is an efficient one since students get prepared for new internship opportunities, and later for successful employment in famous IT companies. It is necessary to have diversity in the instructional process. The main impact of PBL on engineering education is that, within this program, students learn to think ahead and take action in making things happen."



Andrei Poștaru
Univ. lect.
PBL Mentor



Rostislav Călin
Univ. lect.
PBL Mentor

"The PBL methodology of training future engineers prepares them much faster and more efficiently in order to integrate into the IT world. This is the case of various projects & problems that need to be addressed. Today – solving real-life dilemmas as students (within semester projects), tomorrow – developing viable solutions to more complex issues, as skilled engineers. Hence, graduates instructed under the PBL approach will become more valuable on the labor market due to their problem-solving skills."

"Software Engineering students have the opportunity to get a more comprehensive understanding of the huge number of theoretical concepts due to their hands-on experience due to the PBL framework. This approach offers students practical experience in project development, supervision, interaction, and decision-making. An important point to make is that in this environment, special emphasis is put on the combination of the engineering and computer science foundational learning components, known as hard skills with organizational, social, collaborative, teamwork, communication skills, the so-called soft skills."



Vasiliu Braga
Univ. lect.
PBL Mentor

AFTERWORD



DANIELA POJAR
Vice Rector for Financial
Problems & Internalisation

"In the context of the integration into the European higher education space, TUM is committed to fostering the internationalization that must become an integral part of the entire academic community. Intensifying the internationalisation process of TUM is one of the most important objectives, which aims to increase the quality of higher technical education and national scientific research.

Of course, the realization of this objective becomes imperative for university structures at all levels.

This book provides an overview of an English-taught Honours study programme aiming to facilitate external visibility.

We hope that students who are willing to apply for this programme, very soon will become part of FAF community and they will find this book useful since it offers answers to the most relevant questions and it portrays student life following a bachelor's degree in Software Engineering from the inside."



"Writing about 20 years about a community life requires a lot of courage and ambition! I have witnessed the entire process of book creation. It was a meticulous process of collecting the most valuable memories. Thousands of photos have been analyzed in the smallest details to show what a FAF-er's life is like at TUM with challenges but also with a lot of opportunities. Finally, my colleagues got a rewarding result, an amazing book, which, by all means, will change the destiny of many young people who decide to join FAF!"

DANIELA ISTRATI

Univ. lect.
Head of Filière Francophone
« Informatique »

"Working on such a project requires a lot of effort, dedication, and charisma. The authors have managed to prove all these. Readers can learn what it is like to study, work and grow at the Technical University of Moldova, Faculty of Computers, Informatics, and Microelectronics. One of the things that makes this book unique and exciting is the perfect combination of the academic part with course descriptions perfectly harmonized with memories and success stories, pictures, and feedback from academic staff, students, and IT company representatives."

RODICA BRANIȘTE

Univ. lect.
Head of *Information Management*
Study Programme





"This book is an inside look at what goes on behind the doors of TUM students. It also answers the question of what it is like to be a FAF student following a degree in Software Engineering.

The Problem-Based Learning approach applied to this study programme is meant to strengthen the collaboration between students and academic staff. Only together we can build a strong academic engineering community because engineers create the future!"

ANA TURCAN
Univ. lect.
Vice-dean FCIM

"Having the chance to work on this book, I managed to acquire a large sense of comprehension within the English-taught Honors Programme in Software Engineering. Moreover, this enabled me to gain a better grasp of the PBL paradigm in engineering education alongside FAF community. Being one of the editors, It was a pleasure to collect notable citations of remarkable students and professors of the Technical University and their outstanding work. I hope my dedication to this project along with my colleagues is going to be well-received among our fellow students."

ADRIANA SANDUȚA
FAF-181





"Most people choose to volunteer as editors because they're intrigued by language. In my case, I have chosen to be one of the designers for FAF Book because the PBL programme and FAF community need more recognition among different communities, both national & international ones.

Working in a team allows you to enjoy finding just the right word to convey a point, making sense of a complicated piece of information, and working with text until it flows smoothly. Most importantly, do not forget about the experience and knowledge-sharing you can take advantage of during editing work. Working along with a team has its challenges. However, the benefits it brings to light are invaluable."

ȘTEFĂNIȚA CIUTAC

FAF-182

"This book is an example of the labour and dedication of those who challenged themselves to make something beautiful. While contributing to the brochure, I became proud to be a part of FAF community.

As I was involved in this time-consuming process, I became very interested in all of the success stories of FAF alumni and the development of FAF community. I encourage everyone to have a look at each piece of feedback given in this book because it will give them all inspiration and motivation for something big."

VALENTINA CRAEVSCAIA

FAF-203







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Compiling a book is harder than I thought and more rewarding than I could have imagined. None of this would have been possible without the support of the academic staff from the Faculty of Computers, Informatics, and Microelectronics, Technical University of Moldova, and, of course, FAF students and alumni.

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Elena GOGOI, author & editor-in-chief