

ERFAHRUNGSBERICHT ÜBER STUDIENERFAHRUNGEN IN BAYERN [Report on study experiences in Bavaria]

Herkunftsland [county of origin]:	Romania
Studium in Bayern [program in Bavaria]:	von [from] 2018 bis [until] 2022
Hochschule in Bayern [university in Bavaria]:	FAU Erlangen-Nürnberg
Studienfach [subject of study]:	Mathematics and Computer Science
Abschluss [degree]:	PhD in Bavaria

I am originally from Romania and I have been the grateful recipient of the BAYHOST scholarship for the past four years. I have graduated a Bachelor's and a Master's program in Computer Science at my hometown university: "Ovidius" Constanța. At the end of the Master's, I had two very different future options: a job in Business Intelligence in the capital city of Bucharest or a PhD in Germany, at the Friedrich-Alexander University of Erlangen- Nürnberg (FAU). I chose the latter path, and I can safely say that the experiences I have had since then I could not have gotten anywhere else.

Practical experiences and tips

To be admitted for a PhD at the FAU, I had to provide my diplomas obtained after graduating the Bachelor's and Master's studies. Luckily, sending certified, English translated copies per email was sufficient for the initial stage. Once physically at the university, I had to bring physical copies. I was first admitted provisionally, because my home university issues official Master's diplomas only one year after graduation. This distinction was just formal, since even provisional admission granted me access to all the benefits. Proving you have a health insurance recognized in Germany is also important when enrolling. For my first year, I paid in Romania and used the European Health Insurance Card. After getting a job here, I could qualify for the local, public scheme. Alternatively, there are some student insurance packages.

PhD students are not eligible for university dorms, so they have to find their own kind of **accommodation**. Private dorms typically have long waiting lists in a student city like Erlangen. My choice for the first few months was to have direct arrangements, in the style of Airbnb. After the first year, I moved to Nurnberg and got a standard rent. The important feature for me was to have a place with all the utilities and furniture included. Otherwise one needs to buy them, be responsible for moving them and selling them at the end of the stay, which I find unnecessary for relatively short stays. My rent (all expenses included) was around 450-550 euros per month, living alone.

During the early weeks, as I was settling all these initial matters, I was helped a great deal by the **FAU Welcome Centre** as well as by the secretary of our chair. Both have extensive experience with international guest scientists and offered invaluable practical advice and guidance.

While both Nürnberg and Erlangen have a dense public **transport** network which includes the Nürnberg Airport, Erlangen is clearly dominated by cyclists. Since it is so common, cycling can provide a means to connect with locals culturally, who also regard it as a popular hobby, along many other sport/athletic activities. Enrolled students get a basic semester ticket allowing unlimited public transport except for workdays during 6 AM and 7 PM. To cover this time, an additional semester ticket can be purchased, for about 30 euros per month. Both of these tickets cover a fairly large area of Bavaria, not just the cities of Nürnberg and Erlangen.

Food costs depend to a significant extent on personal preferences. Given the international expansion of German supermarkets, the cost of their food is comparable to that of other countries. On the other hand, food from specialized stores can be two, three times etc. more expensive. Restaurants in the area offer a main course for 10-15 euros.

In terms of networking, students maintain a wide range of **clubs and associations** for all sorts of purposes: arts, sports, competitions etc. Of course, unless you are already familiar with the language and culture, they can be rather overwhelming at first. As a warm-up, there are events dedicated to internationals that introduce them to their new environment. Some of these are offered by the FAU Welcome Centre. Even outside the university, there are many other organizations bringing people with common interests together.

This area of Germany is particularly rich in terms of **culture and history**. The people here are very keen on maintaining and passing on important traditions. Most visible to a foreigner are the festivals and fairs, with Nürnberg being especially famous for its Christmas Market. Many cities have their own version, along with several other fairs and processions relevant either to religious events or to the old agrarian times. Each and every place puts its own spin not only on these special events, but also daily things like bread and beer. It is common to find unique kinds of these, which you can only experience in that particular small area. A feature I have appreciated throughout the years were the church concerts, featuring both renowned and local musical groups playing classical music.

Academic experiences and further qualifications

One of my favorite advantages of being a PhD student at FAU is the opportunity to take part in the **courses offered by their Graduate Centre**. The topics are diverse and useful to many if not all kinds of PhD students: scientific writing, presentations, data management, etc. Most topics are covered in both English and German. For enrolled PhD students, these courses are free of charge. Especially helpful at the beginning of my stay were the German courses offered by the Language Centre. They are separated based on skill and level. Since my PhD was an unstructured one, I did not have to take part in any particular courses at the university. However, I was free to join any.

The university has several small **libraries**, which are specific to the fields being taught and researched at the respective campus, as well as a central library in Erlangen. Through the nature of my topic, I mostly worked with online content, in the form of scientific journal articles. The university

has subscriptions to many journals and a portal service which allows sending requests to gain access to more resources. The libraries also offer printing services, large reading halls, terminals, etc.

The **working relationship with my supervisor** has always been an excellent one, and I became more and more aware in time of how lucky I was. During a leadership seminar, I found out his style is called *Managed Cooperation*, characterized by a high degree of clarity and interaction. My PhD supervisor always offered me both freedom and autonomy, as well as guidance and ideas. His support meant a great deal to me, as he was also ready to find ways to help me round up my finances. He was always encouraging of any initiative I had that led to my development. Despite being incredibly busy, with several PhD students, projects, courses, etc., he always made a point to have weekly meetings for discussion. I count his influence and impression as one of the best aspects of my stay.

My supervisor has always supported my going to **conferences and workshops**, both within and outside of Germany. To date, I have visited Austria, France and the UK for conferences. Since my supervisor is also the head of a division of a research institute (CERFACS), I also had a couple of research stays there, in Toulouse.

Prior to the pandemic, it was usual to have Thursday as a "**Research Day**" where members of the chair would present their research topics and progress. It was a great place for discussion, ideas and general exchange. Often, there would be external guests, including international ones, giving presentations of their own. Also, students working on their Master's or Bachelor's thesis/project gave an initial and final presentation during such events, which allowed them to receive useful feedback and suggestions. Another important function of this day was the opportunity to give a trial run to presentations about to be given at conferences. The presenter would be helped to improve his presentation regarding both the slides and the delivery.

An event always dear to my heart was the **annual BAYHOST Weekend Seminar**. This was an opportunity to meet all the current students supported by the project as well as to learn something from a field of Humanities, complementary to my own field. Being surrounded by people with a similar background, who were going through the same experience and had firsthand knowledge of the benefits and challenges of being an international student made me feel as if at home, with family. Each such seminar was another proof of how much care and commitment was invested by the BAYHOST team in order to make sure the students were well taken care of, and could focus on participating and exchanging experiences.

Through my supervisor's many international contacts, I was put in touch with many scientists. The longest **collaboration** was with a researcher from Germany who has been working at CERFACS for several years. She soon became my second supervisor, with whom I would have weekly meetings exchanging ideas, getting feedback and helping improve the quality of my work. For the past couple of months, I have been fortunate to be a part of an additional collaboration. At one of the seminars offered by the FAU Graduate Centre, I gave a presentation which interested one of the attending PhD students in Physics. After an initial discussion, we started working together on algorithms for Electrical Impedance Tomography, a much cheaper and safer alternative to the current technologies used by radiologists. This work is a welcome complement, giving me a chance to apply the abstract

knowledge I have gained during the PhD years.

At the beginning of my PhD period, I spent some initial weeks getting to know my colleagues as well as their topics of research, to see in which way I could best integrate myself into this network of interests. Following this, there were a couple of months where I took a more practical approach, reading about several topics, trying them out numerically and comparing them. In time, a more concrete image began to form and I got closer to a precise answer to the question: **What do I want to research and how can this take the form of studies/articles?** Once I had this answer, I could focus on a specific subset of the literature, which allowed me to gain a deeper understanding of my chosen question. Then I was ready to formulate my own theoretical constructs, doubled by numerical tests and formal proofs. During this time, my supervisor was supportive and interested, not imposing any particular direction. I was free to pursue my path as I saw fit. I was grateful to receive his extensive knowledge in terms of structuring the written material in a way that would make it easy to transform into a journal article.

Other avenues of research involved significant collaboration from the beginning to the conclusion, which allowed me to improve my communication skills and appreciate the importance of feedback and different perspectives. Out of the many ideas explored, some clear story lines emerged, leading to **three articles**. At the time of writing this document, one of the articles is close to being accepted for publication, one is in the final internal review phase while the last one is still being developed. With all three accepted, I have the basis for a cumulative PhD thesis.

One of the **main benefits** of being part of a PhD program outside my home country is the development of international and interdisciplinary contacts. The core here is of course the FAU, in particular my host chair of Computer Science 10. Another important one is the research institute CERFACS. Aside from institutions, individual contact to researchers can be helpful not just for longer term collaborations, but also for circulating information such as offers for positions and interesting projects or looking for article reviewers. Part and parcel of broadening my horizons was the participation in conferences. This was possible thanks to the generous support of my chair and supervisor, which cannot be taken for granted. While conferences are useful for networking, an even more remarkable function is presenting the current research landscape and seeing what the community is interested in studying in the years to come. I greatly appreciate the exposure to a different university system and business / funding models. Having chairs where the teaching duties are distributed among several levels of professors, graduate and undergraduate students has shown me a way how one can have more time for research. The close ties with the industry and major funding bodies are essential to providing the chair with resources for the staff members, be it equipment or funds for research related travel.

Plans or activities after the BAYHOST-funding

I often got the questions "Why do you want a PhD? Why abroad?". My answer has always been "To have more career opportunities, to be able to choose from a wider pool of jobs and activities". Four

years of PhD later, I can confirm these early expectations.

At this moment, I can continue working within the university, on topics of research similar to those I have already looked into. I have also applied for external positions, to institutes such as Fraunhofer, which would challenge me with new directions of research and potentially leadership. Jobs in the industry are also interesting to me, in particular those related to software development for digital transformation. I can see my near future in any of these settings, each having their own advantages.

With regards to the more distant future, I am open to exploration. If possible, I would like to return to Romania, at least for a time, in part to spend time with my family. If anything, the pandemic has taught us that we cannot take anything for granted, neither personally nor professionally. With so many people losing their jobs and/or having to switch to a new one, I am particularly glad that my path of study has opened so many doors to me.

I would like to conclude this document with my most heartfelt thanks to the BAYHOST team, to which I am grateful for making possible this four year journey. This experience has allowed me to grow in both expected and unexpected ways. Whenever given the chance, I will always warmly recommend this project and praise its members for their care and professionalism.