

The level of research is very high at UWB

Dr. Levon comes from Georgia, a small mountainous country located in the Caucasus region near the Black sea. He did his Ph.D. studies at the Tallinn University of Technology in Estonia. After his studies, he wanted to continue in a postdoc programme and found a suitable programme at the University of West Bohemia.

What exactly do you do at RICE?

First, I would like to quote the famous British writer of the 17th century, Thomas Fuller, who said: “We never know the worth of water till the well is dry.” I totally agree with this statement but even if the well is full of water, we still need to transfer water or other type of liquid from the source to a customer. And it can be a significant distance. In the time of Mr Fuller, people were mainly using buckets for this purpose but nowadays we are using pumps, and particularly centrifugal pumps. They are widely used in water distribution systems. For example, when you open the tap in your kitchen and get the water it is because somewhere in a station there is a big centrifugal pump which transfers this liquid to the customers. Approximately 80-90 percent of all water production is due to centrifugal pumps. That is why it is quite an important topic nowadays. In fact, these types of machines consume a lot of electricity. There is no exact estimation, but according to statistics, approximately 40 percent of all produced electricity is consumed by pumps because you can find pumps everywhere. In industry, in domestic applications, even in your car where the cooling system uses some kind of centrifugal pump. So, it is very important to investigate and research this topic to optimize these systems and reduce the rate of electricity consumption.

What specifically are you focused on?

I am focused on smart pumping systems. One of the approaches to study this system is called the model-based approach. You have some kind of simulation model which describes the behaviour of the system. Based on this model, we can actually improve and enhance the system. For example, a so-called energy management system usually uses these types of models. Based on this system, we can significantly improve the operation of the centrifugal pumps.

When did you start to work on this topic?

My doctoral thesis was focused on this topic. Here we continue to work with representatives of RICE and we

also try to find new ways to make a system more robust and flexible. In RICE, I also started another research project related to solar water pumping systems. As you know, in many countries, especially in developing countries in Asia and Africa, there is a high demand for water – a huge water scarcity. People are suffering, there are sanitation problems – this has effects not only for the health of the population but also for the economics of these countries. We need actions to overcome these issues and, one of the possibilities is to use renewable technologies. In developing countries, and also in some areas in Europe, especially with no electrical grid connection, you may need these water systems for agriculture or domestic purposes.

Are more foreign researchers in your team?

In our mobility programme, there are several foreign researchers working in RICE, but we work in different fields. In this particular project, I cooperate with one of my Czech colleagues. I mostly collaborate with the electrical drives and power electronics research team.

How long have you been at the University of West Bohemia?

The Mobility 3.0 programme has a fixed term – at the beginning it was a half year. Later there was a possibility to extend it for another year, so altogether it is 1.5 years. I will stay here till the beginning of April 2020.

After that, do you plan to go back to Georgia or to your Estonian university?

I have not decided yet. I still want to get extra experience and to improve my knowledge in some fields. At the moment I would like to continue with my research in another European country.

Why did you choose the University of West Bohemia?

It is a very interesting story – a kind of luck. Thanks to the ERASMUS+ programme, we had a visiting lecturer from the University of West Bohemia at my home university in Estonia and fortunately I attended his presentation. Before that, I did not even know about the existence of the University of West Bohemia. Later, when I checked his presentation, we had some communication; we discussed the ongoing projects in RICE and I realized that the level of research is very high – according to all international standards. So – for me it was not choosing among unknown

universities; I already had an idea and I knew about the research at the Faculty of Electrical Engineering.

Are you satisfied here in terms of the work environment and conditions?

Yes, definitely. It was one of the reasons why I decided to choose the University of West Bohemia. I already knew there are possibilities to conduct this kind of research. You have very nice, well-equipped labs with modern facilities and high-level-trained staff with deep theoretical knowledge. All the conditions are satisfactory for me and, of course, the country itself is amazing. I really like the Czech Republic. Unfortunately, before I had visited it only once – but you know, if you visit a country as a tourist, it is different. When you live here for some period, you become more familiar with the culture and the history. You are really very lucky, because you have such a nice country, interesting history and many positive and open-minded people. Especially the young generation – I see they are very focused and determined to become good specialists in their field.

What favourite places do you have in Pilsen?

One of my favourite places is the central town square with the wonderful cathedral and nearby parks where you can relax, especially during the summer period. I like the fact that there is also a possibility to hike, for example to Radyně castle with its very nice view of Starý Plzeňec and Pilsen city. The location of the city is really very nice, and you have many places to relax.

But, probably, our mountains are not high enough for you...

This is true but, at least, you have the Šumava mountains. They are nice and spectacular.

What about the Czech language – did you have an opportunity to learn it?

Thanks to the organizers of the mobility programme for the opportunity provided, I attended Czech language courses – they organised them specially for us. I have learned some basic expressions and I have to say that Czech language is quite unique but, at the same time, it is not very difficult. It is difficult from the grammar point of view, but not in terms of the vocabulary. In Georgia, we also speak the Russian language, which is somehow related to Czech.

And Czech cuisine? Is it really “heavy” for you, as it is for many other foreigners?

Actually, Georgian cuisine is also focused on meat products, so it is quite usual for me. One of my favourite dishes of Czech cuisine is goulash. Everybody says that “svíčková” is “more Czech” but still, I like goulash – you can cook it better than Hungarians.

And Czech beer? You are now in a world capital of beer...

Well, you know – in Georgia we produce a lot of wine. Actually, Georgia was the first country where the first grapes started to grow, thousands of years ago. So, I am orientated more toward wine drinking, and I really enjoy Moravian wines. They are pretty good – if I compare them with classical Georgian wines, I would say that Moravian wines have a pretty nice taste.

What is the most important thing you have learned here and what have your Czech colleagues learned from you?

I can call it “mutual benefit”. As I have already mentioned, I was working on my research topic before, so I brought some knowledge from the Tallinn University of Technology, which is one of the leading technical universities in the Baltic states. There, we had a very strong connection with Finnish and Swedish universities – Lund, Helsinki and Aalto. So, I hope I brought some theoretical background from my previous research but, of course, I have got many new ideas and proposals from my Czech colleagues. Now we are implementing some of these ideas, and I think that it is beneficial for both sides.

Finally, do you have any message for the University of West Bohemia?

First of all, I would like to express my sincere gratitude to the wonderful mobility programme team because they very much supported us – without their help it would be much more complicated to overcome all the bureaucracy and integrate into a new environment. If I could give some recommendation to the University of West Bohemia – it would be good to promote the university more actively abroad in educational fairs and other events to attract more international students. They will create an international atmosphere here and I am sure it would be very positive. ●



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