

Get to know Alex Miranda Pascual

Interview + Transcription: Jennifer von Olnhausen

Scientist: Alex Miranda Pascual

[smoothed transcription]

The first question is: how I arrived here at KIT?

I'm from Barcelona, I did my bachelors and masters degree in mathematics and nearing the end of my masters thesis, I was reached out by Javier Parra, who is closely associated to KIT and he communicated me that there was this PhD position at the KIT and also at my home university, at the Polytechnical University of Catalonia. I was mentioned that they were looking for a PhD student to work on *Differential Privacy*, and I looked into it and I was quite interested. So, I'm doing the PhD in the Polytechnical University of Catalonia, but I'm in an exchange here at KIT in the meantime, having started here in January and I've been working here since.

The second question is: what I am doing in my PhD?

As I said before, my PhD started on *Differential Privacy*, *Differential Privacy* is a *Privacy Notion* with a very strong mathematical background. But my PhD, we centered it into a more specific context, which is the anonymization of trajectory data. So, trajectory is basically what your phone records, what your car records, where you've been in the streets, which shops have you visit; so, all these trajectories that these devices record, hold a lot of sensitive information and this sensitive information can be very useful for attackers.

An attacker could learn, where you've been, where you're going to be, so, all this sensitive information that might be attackable or maybe wanted by an attacker must be protected. And for doing this, we try to... well, we are studying the literature to see what types of attack have been made, what can be done to protect this information and we try to provide solutions to this type of attack.

The third question is: what am I trying to achieve with my PhD?

So, having recently started my PhD, I don't have an exact topic. But the idea is to move inside trajectory anonymization, how we can achieve this privacy that we said, this utility that I mentioned before and for doing this, we want to try to find new mechanisms to construct, new mechanisms to understand 'What could make a good mechanism?'. So, in the PhD you have a lot of changes, a lot of twists, a lot of turns in your way, so, you must be aware of and open to these possibilities and see that 'Oh, maybe something is going to change, maybe something new is going to appear!'. So, I still haven't centered my PhD in open to a lot of possibilities, there's new possibilities emerging each day, but one must be able to see them, so, the main idea is trying to provide... well, you could say trying to provide the best output, the best type of protection of against trajectory attacks, but our ultimate goal is to try to provide this type of protection.