



Student: Daniel Cutting, University of Sussex

Placement: Earth-i

Role: Data Analysis Intern (now a postdoc at University of Helsinki)

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What is the subject of your PhD?

I study cosmological first-order phase transitions which are phenomena that may have occurred in the early Universe. During these dramatic events the whole Universe changes state through the nucleation, expansion and merger of bubbles. I perform simulations to calculate the gravitational wave signal produced when these bubbles collide which, if detected, could give an insight into the conditions a split second after the Big Bang.

Describe a typical day on placement

This placement was conducted remotely due Covid-19. I was working on using satellite imagery to identify coffee fields in Brazil.

I would set myself up at my desk at home in the morning and spend the day programming, reading literature and wrestling to manipulate our data into a form that could be used by a neural network. This was very similar to how I would spend my days researching as a PhD student. The day would be broken up with various Zoom meetings, such as for a “stand up” discussion with the tech team at 10:30 am, where we would all discuss our plans for the day and any issues we foresaw. I would also have a daily catch up with the Senior Data Analyst where we would discuss my results and ideas for next steps.

What skills and knowledge have you gained during the placement?

Going into the placement I didn’t have any previous experience with machine learning or with Earth observation. I learnt a huge amount in these areas in just two months and have come away wanting to learn more. I also got to experience using various industry tools, from programming libraries like TensorFlow, to team management software such as Jira. Most important I got a sense of what it is like to work in a technical role in a commercial company in industry. I found that I really enjoyed the environment and the style of working with frequent contact and clearly defined tasks.

How do you think doing a placement has benefited you for the future?

Prior to this placement I had little experience of working outside of academia, with most of my work experience in retail roles. Not only did this placement give me a new toolset of skills relating to data analysis and machine learning, but it also gave me the confidence that there are interesting roles and research that I could pursue outside of academia.

What advice would you give to a PGR student who might be interested in seeking a placement?

Definitely do it! I really enjoyed my placement and I learnt so much. It is so valuable to see what research in the commercial sector is like, and I made many friends and contacts among my colleagues. I met people within the company who had done an internship and been hired after they completed their studies, so it can also lead to job opportunities. Most importantly for me, the placement provided a refreshing change of pace from the PGR experience.