

Next++ Workshop, Singapore

Bernard Roper, Web Science iPhD Student



I recently attended the Next++ Workshop in Singapore with a group of Web science CDT Students. Many thanks to Wendy Hall and the team at NUS, who made the trip a thought provoking experience. After a 13 hour flight I fondly imagined I had overcome the jet lag and spent a day wandering around in the Jungle (yes Singapore has a large tract of rainforest in the middle of the city, surrounding the McRitchie reservoir).

The following day the full effects of jetlag became apparent and I began consuming large quantities of coffee and ginseng, because the Next++ workshop gave us plenty of reasons to stay awake.

The Next++ project focuses on the challenges and paradigm changes associated with big data analytics over unstructured data which are affordances of what is increasingly being referred to at the AI revolution. The first day was a series of presentations by researchers from TsingHua and NUS around the theme of Explainable AI and Wellness, focussing on AI analytics over unstructured data. I was impressed at the extent of the research around the use of knowledge graphs, semantic web technology and AI, something that, in the UK seems to have taken a back seat in more recent years. Definitely not so in Asia.

Wendy Hall started the day with a presentation on socially responsible AI looking at the rise of AI and the interplay between the technology and society from which it emerges, making the point that technology is shaped by society as well as shaping society, and that this process does not always have desirable or easily predictable results, especially when biases in the sections of society who are directly involved in building elements of it become manifest in its effects, a point neatly illustrated by the proportion of men in the room.

We then saw a series of presentations on explainable AI, AI in financial market analytics, AI frameworks for natural language processing, and frameworks for extracting knowledge graphs from video. This last topic was mind boggling. From a technical viewpoint the combination of Image recognition and inference from ontology was fascinating. I have long been interested in AR and the idea that you might use these techniques to infer what is happening in a camera feed and add content on that basis makes me want to apply for another PhD after I finish this one (only joking!). Having been a web scientist for a couple of years now I am also mildly terrified by this. The possibilities for surveillance are considerable and the consequences and possibilities of bias are food for thought and need to be addressed.

On the second day we took part in a session looking at Diet lens, an app created at NUS. Starting with a presentation by John Staniforth, a web scientist from Southampton who is now living out in Singapore and working full time on DietLens.

DietLens is an app which lets you photograph your food and using a combination of image analysis, geolocation, AR techniques and a graph knowledge base will identify your food, estimate the portion size and provide health advice based on the food you photograph with it. innovative project is the first app of its kind, and having tested it out I was impressed, and more than a little depressed by my daily calorie count. Singapore is a great place if you like food! We then went on to discuss how this might be moved to the UK and what role we at Southampton might play. The app is currently trained on Asian food and part the project would involve devising strategies for making and integration a European dataset. This app has enormous potential for providing health advice, but could produce a dataset that has the potential to be a valuable analytics tool in public health research. Of course, using it in this way also has enormous potential to introduce emergent biases and effects that should keep us web scientists going for quite a while.

So back to Singapore, which is a fascinating place. I mentioned the jungle at the start of this post, and it is surprising that this hi-tech metropolis with its lights and shiny sky scrapers also has virgin tropical forest in the midst of it. Singapore's water supply comes from the enormous McRitchie reservoir in a valley in the middle of the island, which is surrounded by dense jungle.



I got 50 yards in and it was like a sauna, so after retreating, tanking up with iced milky tea and getting a bottle of water I headed back up the trail and ended up accidentally doing a 14k hike and sweating my own body weight.



After walk across a terrifying treetop footbridge, I met a wild boar which was a little concerning after the signs warning hikers stay calm and back away slowly



I was relieved to find the boar had evidently read some signs on what to do if you encounter humans, and rapidly disappeared into the bush. Other highlights were macaques, enormous monitor lizards on the way in, incredible butterflies and a disgruntled gecko that didn't want to be photographed. Oh, and the sensitive plants, which hide when you touch them

The city is a stark contrast to the McRitchie trail and it's a strange feeling standing in the jungle and

looking out at the sky scrapers. The place is famous for its strict laws, but there are signs everywhere and it's fairly easy to avoid getting in trouble. Some of the signs even have an endearing quality.



As you can see the whole place is spotless, fines for littering are severe, chewing gum is illegal in public, as are any outward signs of drunkenness and woe betide anyone eating on the trains; as far as graffiti goes, there is none and it is best not to think about what the penalty for that

is (It involves a practice introduced by the British!). Also note the surveillance cameras above. Having said that, the advantage of what seems to me a quite authoritarian system, is that you feel pretty safe anywhere and that does tend to make people more open and friendly, which, combined with a good deal of civility makes for a pleasant atmosphere.

Public transport is cheap, punctual, fully integrated and air conditioned in a country which has had zero car growth for some years now. Air quality is impressive and puts Southampton to shame! The food is incredible and can be very cheap in the food courts which are establishments hosting a range of small vendors selling an incredible range of Asian food. Beer however seems to start at around £10-00. The heat takes some getting used to, but there are plenty of air-conditioned spaces, such that if you are at a conference, bring a warmer top to avoid shivering in the air con. Also don't forget your broly...