



Artificial Intelligence and Augmented Intelligence for Automated Investigations for Scientific Discovery

AI3SD Interview with Dr Naomi Jacobs
22/07/2020
Lancaster, U.K.

Dr Samantha Kanza
University of Southampton

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Network: Artificial Intelligence and Augmented Intelligence for Automated Investigations for Scientific Discovery

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Principal Investigator: *Professor Jeremy Frey*
Co-Investigator: *Professor Mahesan Niranjan*
Network+ Coordinator: *Dr Samantha Kanza*

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The AI for Science Network interviewed Dr Naomi Jacobs after her online talk for the Network on Design Fiction as a method and why we might use it to consider AI.

1 Interview Details

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| Title | AI3SD Interview with Dr Naomi Jacobs |
| Interviewer | SK: Dr Samantha Kanza - University of Southampton |
| Interviewee | NJ: Dr Naomi Jacobs - Lancaster University |
| Interview Location | Lancaster, U.K. |
| Dates | 22/07/2020 |

2 Biography



Figure 1: Professor Naomi Jacobs

Naomi is Lecturer in Design Policy and Futures Thinking at Imagination Lancaster, the design-led interdisciplinary research group at Lancaster University. Her work crosses various disciplines including design, computer science, and social science. Naomi's previous work has focused primarily on interaction; between individuals, communities, disciplines or sectors, and between people and technology and the media they consume. Naomi is particularly interested in the intersection between the digital and the physical, and how this impacts society on many axes. She has been part of a number of research projects looking at how technologies such as IoT and AI are being implemented and governed, and is interested in how design can be used to shape policy for new technologies. In particular, her current work focuses on issues such as trust, transparency, privacy and bias, using speculative design methods to explore implications of technology currently in development or proposed for the future.

3 Interview

SK: Naomi, what first got you interested in Design Fiction?

NJ: I first encountered Design Fiction when I joined Imagination Lancaster in 2012 as a research association on the Creative Exchange project (one of the AHRC's Knowledge Exchange Hubs). I learned of the innovative work being done by Professor Paul Coulton and others, and was inspired to use this method in my subsequent work at the University of Aberdeen, before I returned to Lancaster in 2020. As someone who has always loved science fiction, fantasy and other forms of speculative fiction, I was intrigued by the idea of bringing speculation into research in a rigorous way.

SK: Naomi, what was your PhD research area? Why did you choose this topic?

NJ: My PhD was quite unrelated to the work I am doing now, being in the field of experimental psychology. My topic was language, specifically why we use our hands to gesture when we talk. I got interested in this area during my undergraduate degree in Biology, when I took courses in human evolution and was fascinated by the evolution of language. Since language development is mainly studied in psychology rather than biology, I ended up moving across and beginning my career as an interdisciplinary academic!

SK: Naomi, what did you do after your PhD? When did you decide to pursue a career in Design Fiction?

NJ: After my PhD I left academia for several years, before returning to work as a co-ordinator on a project called 'Bridging the Gaps' which was based in the computer science department at Manchester Metropolitan University, but was about facilitating interdisciplinary collaboration. This work resulted in several publications on the topic and led to my role at The Creative Exchange during which I conducted research on working collaboratively across academia and industry, and also on the notion of 'digital public space' and how technology impacts society.

SK: Naomi, you said you were currently working on a project in Beyond Imagination. Can you tell us a bit about that?

NJ: Beyond Imagination is a three year project funded by Research England which aims to explore and demonstrate how cutting-edge design research can create a healthier, more prosperous and sustainable world. By significantly expanding Imagination Lancaster it intends to identify and address current and emerging global challenges such as Ageing Society, Artificial Intelligence and Data, Clean Growth, Health and Wellbeing. The project is organised into research 'clusters' each with a specific focus, and I am part of the Population and Policy cluster, which applies design research and methods to address policy and population challenges, global futures and novel ways to inform policy.

SK: So, what is Design Fiction? And what is Speculative Design? And how do they differ from one another?

NJ: Speculative Design is a field of design research which uses speculation to provoke and to prompt discussion about different types of potential future outcomes or alternate ways of doing things. It is closely related to speculative literature and science fiction, as well as critical design which creates objects or artefacts that are intended to ask rather than answer

questions, and are not usually intended for mass production.

Design fiction is a particular type of speculative design in which tangible artefacts are designed to represent alternate presents or potential futures, often involving technology. Rather than simply creating a story or scenario, a fictional world is created and then objects from that world recreated for people to interact with – props from another version of reality. This could be physical objects, films, research papers or a range of other items to help people suspend disbelief and explore the consequences.

SK: A lot of the terms you used at the beginning of your talk (transparency, bias, explainability etc) are all synonymous with research ethics terminology. How do design fiction and research ethics interact?

NJ: Design fiction is a particularly useful tool to use when exploring questions of ethics around new technologies, because often by the time real technology prototypes have been created and deployed it is too late to understand the ethical concerns that might unexpectedly arise from them. By creating fictions we can ask the hard questions without causing risk to real people, and help design better solutions that are beneficial to society.

SK: Can you tell us about some of the different design fiction projects you are currently working on?

NJ: In my past and current work I have been using design fiction to understand how introducing new technologies can have an impact on communities and wider society. For example, my work at Aberdeen was on the topic of the Internet of Things, and we created design fictions around smart waste management. I am currently part of an interdisciplinary project using these methods to look at new technologies in the food sector, specifically how AI might be used when data is placed in data trusts so that it can be shared among different stakeholders in the food supply chain without revealing things that organisations prefer to keep private. We are interested in understanding complex ethical questions that might arise if such data trusts, which are currently in development, are put into action.

SK: Can you give us some examples of different types of design fiction objects that might be created for an AI project?

NJ: The list is almost endless! Design fiction could take the form of films that [show the technology in action](#) [1] or an interactive interface that mocks up what using the technology would feel like, policy documents that provide regulation for the fictional technology, or a robot or other physical manifestation of the technology.

SK: You mentioned in your talk that some previously created “speculations” had come close to reality (e.g. Game of Drones). Can you tell us a bit more about this?

NJ: Joseph Lindley and Paul Coulton, who wrote the ‘Game of Drones’ paper and carried out this work, have written about how this was an example of ‘future mundane’ design fiction [2]. This type of speculative work is not imagining far flung or outlandish scenarios, but building on existing momentum and trajectories of technology to consider what the next steps might be. Inevitably some aspects may therefore come close to reality, such as the use of drones for enforcing violations of acceptable behaviour in public space [3]. Reality really can be stranger than fiction!

SK: What are the main challenges of design fiction, and using it as a tool for AI?

NJ: One of the challenges is that if these fictions come too close to reality, they run the risk of being deceptive, which is not the intention. When using these methods it's important to be clear about their fictional nature and that they are a tool for understanding, not something designed to trick people. As researchers we have ethical duties to people who are part of our research, and most of the time these are provocative think pieces, with suspension of disbelief rather than false beliefs being the desired outcome.

Another thing which I think is important to remember when using developing design fictions is that the 'design' part is as important as the 'fiction' – they have to be carefully created using the same methods that would be involved in designing a real artefact. It's not just 'making things up', but representing a slightly (or significantly) different world and accurately portraying all consequences of that change.

SK: Could you recommend some materials / resources for those looking to use Design Fiction in their research?

NJ: Julian Bleeker's 2009 'short essay' is generally considered to have introduced the idea and kickstarted the research area [4]. Dunne and Raby's 2014 book 'Speculative Everything' is also a good overview of the wider field [5]. I would also recommend recent academic publications by my colleagues Joseph Lindley and Paul Coulton who I have mentioned several times above and are leaders in this work.

SK: How has COVID-19 affected your teaching and research?

NJ: Right now, my teaching is mostly supervision of postgraduate students, so that has been fairly straightforward to move online. I am currently planning for teaching online for the autumn term, since we will most likely not be going back to in-person teaching just yet. It's a challenge, but also quite exciting to plan new ways of working with groups of students that don't require being in the same physical space.

Some research has inevitably been delayed or made impossible because of COVID-19, but it has been very interesting seeing all the innovative ways that people are using technology to overcome the challenges that not being able to work together in person has brought. I've attended several conferences and workshops using different platforms, and our team at Imagination has been working very hard to keep up the collaborative, open attitude that characterises the department, and support everyone through the challenges.

References

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