

YGL-NTU Executive Education Programme 15-19 November 2021

Asynchronous Lectures

15 November 2021

Lecture 1:

I believe: Designing and Researching the Future impact of Innovation

<https://youtu.be/NqjORUZPqr4>

Abstract

In futurist research, we envision new possibilities and think through the consequences of these (im)possible innovations for people and their impact on society. In developing Social AI and Social robotics solutions, we have been imagining what future robotic services may look like, how to innovate technologically to make the solution come true and study the social and societal consequences. In this presentation I will discuss projects in which we created robotic future technology, how we went about designing integrated AI driven robots that were envisioned to operate in populated everyday environments and how we studied the impact of these controversial technologies on people's lives. Also, it will be a lot of interesting and fun videos to watch as we learned to make robots for people through trial and error.

Lecturer: Professor Vanessa Evers

Professor, School of Computer Science and Engineering

Director, NTU Institute of Science and Technology for Humanity (NISTH)

vanessa.evers@ntu.edu.sg



She established to study the impact of technology on human society, and to bring industry, government and academia together to find ways to enhance the use of technology for the betterment of humanity. In addition, she is a chair and Professor of Human Media Interaction, University of Twente, the Netherlands. She is also the Scientific Director and founder of the DesignLab in the Netherlands, a centre for multidisciplinary projects with societal impact based on 'Science to Design for Society'.

Prof Evers studied Information Systems at the University of Amsterdam, Business Information Science at UNSW, Sydney and has a PhD from the Open University UK. Previously, she worked for the Boston Consulting Group and was a visiting Scholar at Stanford University.

Prof Evers' work exists at the intersection of Computer Science, Psychology, Design, and Electrical Engineering and focusses on human interaction with artificially intelligent systems and cultural aspects of Human Computer Interaction. It covers design of Artificially Intelligent systems that are able to interpret human social behaviours and respond to people in a socially acceptable way as well as the evaluation of the impact of such technology on people and society. She is a frequent public speaker in the media and at international fora such as the World Economic Forum at Davos.

16 November 2021

Lecture 2:

The Staging of Omnipotent Machines

<https://youtu.be/DSGZ0FyFrFs>

Abstract

The collective imagination of a quarrelsome concept is a fertile ground for fiction, fantasy, art, and speculation. Throughout history, the robot and its companion, the intelligence, have constantly challenged and altered their very own definitions. Current AI and Robotics are disturbing the playground of our specie and what is tacitly considered uniquely human, for instance: cultural production, our brain, our souls, and conscience.

The robot in its various form has always been an uncomfortable mirror of the human. It is also an epistemological snapshot of our comprehension of our specie at a given time. Between object and subject, between the living and the dead, between utopian and dystopian, we assemble and collage machines that constantly challenge our own essence. What are the contemporary snapshots?

Fiction and art are an integral part of an epistemological zeitgeist. Speculating on possible futures, making leaps of faith, warning, and raising ethical issues, I will navigate across a series of robots and AI. As in fiction, scientific outcomes are equally staged, and we shall scrutinize the fallacies of those mise-en-scènes. Do we want to believe?

Finally, as characteristic of the Anthropocene, there is an acceleration of the exosomatisation human activities, the transfer of our skills to external tools and systems. Looking ahead on how to tackle these immense challenges ahead of us, we must rethink the deployment of AI and robots among humanity. We must start thinking outside of the net...

Recommended Readings:

- 1) <https://spectrum.ieee.org/special-reports/the-great-ai-reckoning/>
- 2) <https://www.technologyreview.com/2017/10/06/241837/the-seven-deadly-sins-of-ai-predictions/>
- 3) Reichardt, Jasia. Robots: Fact, fiction, and prediction. London: Thames and Hudson, 1978.
- 4) Brooks, Rodney A. "Intelligence without representation." *Artificial intelligence* 47.1-3 (1991): 139-159.
- 5) Brooks, Rodney A. "Elephants don't play chess." *Robotics and autonomous systems* 6.1-2 (1990): 3-15.
- 6) Suchman, Lucy. "Subject objects." *Feminist Theory* 12.2 (2011): 119-145.
- 7) O'neil, Cathy. *Weapons of math destruction: How big data increases inequality and threatens democracy*. Crown, 2016.
- 8) Broussard, Meredith. *Artificial unintelligence: How computers misunderstand the world*. mit Press, 2018.
- 9) Stiegler, Bernard. "Escaping the anthropocene." *the crisis conundrum*. Palgrave Macmillan, Cham, 2017. 149-163.

Lecturer: Associate Professor Louis-Philippe Demers
School of Art, Design and Media
Nanyang Technological University, Singapore
lpdemers@ntu.edu.sg



Louis-Philippe Demers makes large-scale installations and performances. He participated in more than seventy artistic and stage productions and has built more than 375 machines. Demers' works have been featured at major venues such as Theatre de la Ville, Lille 2004, Expo 1992 and 2000, Sonambiente, ISEA, Siggraph and Sonar. He received six mentions and one distinction at Ars Electronica, the first prize of Vida 2.0, mentions at Vida 12.0 and 15.0, two jury recommendations at the Japan Media Arts Festival, the Interactive prize for Lightforms 98 and six prizes for Devolution including two Helpmann Awards. Demers' research focus on embodiment and on the experience of art and technology. He

was Professor at the HFG Karlsruhe affiliated to the ZKM, and Professor of Creative Innovation and Director of the Creative Lab at QUT. Demers held visiting/guest professorships from the University of the Arts London, CAFA in Beijing and at the Universität für angewandte Kunst Wien. He is currently Associate Professor at NTU's School of Art, Design and Media.

17 November 2021

**Lecture 3:
Imagining our Future Cities**

Video link: <https://youtu.be/u00lhFLLR48>

Abstract

The act of imagining our future cities is a process as old as the first city known to exist – the city of Enoch. Cities are spaces of refuge as the German medieval saying *Stadtluft macht frei* (urban air makes you free) but they can also be living infernos. We are reminded daily since 2010 that our global future is an urban one, and we must take responsibility to do proper urban planning in order to harness the rewards of urbanization. This lecture brings you examples of urban utopias through time, discusses the approaches and tools that have been and are being used in the imagining of our future cities.

Lecturer: Assistant Professor Felicity Chan
School of Social Science, Public Policy and Global Affairs
Nanyang Technological University, Singapore
felicitychan@ntu.edu.sg



I am fascinated by urbanization, the experiences it creates for people, the different forms it takes, its development trajectories, but also simultaneously disturbed by the implications it has on people's lives and on the life of the environment. I teach and do research about urban planning and design, with a particular interest on studying the impacts and implications of global changes on the experience and formation of urban social life, as well as on the design of the urban environment. Topics that I have been working on include immigration, belonging, diversity and inter-cultural competence. Being an urban planner and a practitioner at heart too, I enjoy crafting planning design studios that engage and mobilize my undergraduates to address problems of exclusion in the city through socio-spatial plans and policies.

18 November 2021

Lecture 4:

Funky mods and posthuman bods - what should we become?

<https://vimeo.com/644182781>

Abstract

The future promises radical transformations to our own bodies. From the modification of our genomes via CRISPR; or the injections of nanobots that will repair wounds or excise tumors; or the augmentation of our limbs or organs with robotic addenda; or the ingestion of bespoke drugs tailored with personalized medicine. Our bodies will be the sites of biomedical, bio-robotic, and genomic interventions that will remake us from the inside out. But what will it mean to live with new (kinds of) bodies? Such posthuman transformations will shift not only how we perceive ourselves but also the kinds of families, societies, and communities we make. This lecture rhapsodizes on some of the potential consequences of bodily tinkering and suggests ways in which we might think plurally about what sorts of bodily transformation we can imagine and should desire.

Lecturer: Associate Professor Hallam Stevens

Associate Chair (Research) School of Humanities

Associate Director (Academic), NTU Institute of Science & Technology for Humanity

Co-Director, AI Research Center

hstevens@ntu.edu.sg



I am an Associate Professor in the History Programme and in the School of Biological Sciences at Nanyang Technological University in Singapore. I am also the Associate Director (Academic) of the NTU Institute of Science and Technology for Humanity. I write about genomics, the life sciences, big data, and the history of computers. My first book, published in November 2013, is titled "Life out of sequence: a data-driven history of bioinformatics" (University of Chicago Press). I have also co-edited (with Sarah S. Richardson) a volume of essays under the title "Postgenomics: Approaches to Biology After the Genome" (Duke University Press, 2015). At NTU I teach classes

on these topics as well as on food history and history of science and technology more generally.