



PANEL #1

BARCELONA
May 2024

NexComm 2024 & DigitalWorld 2024

Theme: Human-Technology

Focus: Challenges on Technology Adoption
and Adaptation to Humans-Machine Co-
Existence



CONTRIBUTORS

BARCELONA
May 2024

Moderator

Prof. Dr. Lasse Berntzen, University of South-Eastern Norway, Norway

Panelists

- Prof. Dr. Qing Li, Towson University, USA
- Prof. Dr. Ray Jones, University of Plymouth, UK
- Assoc. Prof. Dr. Susanne Koch Stigberg, Østfold University College, Norway
- Prof. Dr. Michael Hsiao, Virginia Tech, USA



Panelist Position

Barcelona
May 2024

- Citizen-centric technology
- Technology built around the citizen
- Understanding the citizens
- How to achieve adoption?
- Start with the problem, not with the technology
- Lean startup / minimum viable prototype (MVP)
- Learn from the citizens
- Co-creation



Lasse Berntzen, Professor,
Information Systems,
University of South-Eastern
Norway

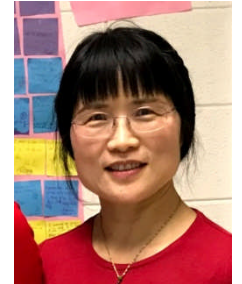
lasse.berntzen@usn.no



Panelist Position

Barcelona
May 2024

- **“AI invasion”**
 - AI evolves fast, how can we cope?
 - AI & ethics: what is considered ethical? What are laws? Rules? Regulations?



Qing Li
Towson
University,
USA



Panelist Position

Barcelona
May 2024

Digital exclusion

- **Risks:** age, poverty, geography, some cognitive & physical conditions, lack of social support
- **Addressed by:** better design, politics, support organisations and structures
- **One approach:** intergenerational codesign should lead to better design for the digitally excluded and a better understanding and support from younger to older generation



Ray Jones PhD MBE
Professor Health
Informatics, Centre for
Health Technology,
University of Plymouth

ray.jones@plymouth.ac.uk



Panelist Position

Barcelona
May 2024

Participatory Design (PD) meets AI

- **Risks:** AI systems are deployed rapidly across domains of considerable social significance—in healthcare, education, employment, criminal justice, and many others—without appropriate safeguards or accountability structures in place. (A. Berditchevskaia, “Participatory AI for humanitarian innovation”)
- **Needs:** Participatory approaches for the design, development, and evaluation of AI systems across industries, academia and the public sector (T. Bratteteig and G. Verne, “Does AI make PD obsolete? exploring challenges from artificial intelligence to participatory design”)
- **PD approach:** aimed at understanding the technology and its potential for changing workplaces and work practices, as well as to open up for people to have a say in choices concerning the technology during its design and use. (J. Greenbaum and F. Kensing, “Heritage: having a say”)



Dr. Susanne Stigberg
Assoc. Professor
Department for Information
Technology and
Communication, Østfold
University College

susanne.k.stigberg@hiof.no



Panelist Position

Barcelona
May 2024

Three different perspectives on AI and PD:

- **AI tools:** in PD for design inspiration or co-ideation (A. Cai et al., “DesignAID: Using Generative AI and Semantic Diversity for Design Inspiration”; L.-Y. Chiou, P.-K. Hung, R.-H. Liang, and C.-T. Wang, “Designing with AI: An Exploration of Co-Ideation with Image Generators”)
- **PD activities:** to collaboratively envision digital futures with AI (V. Popova, “Co-creating Futures for Integrating Generative AI into the Designers’ Workflow”; M. Muller and Q. V. Liao, “Exploring AI Ethics and Values through Participatory Design Fictions”)
- **Lacking: Mutual Learning** to understand AI and its potential for changing our lives. “It may just be us who needed reminding of the centrality of mutual learning to Participatory Design, but it appears to be less explicitly discussed in PD papers these days” (Robertson, T., Leong, T. W., Durick, J. and Koreshoff, T., “Mutual learning as a resource for research design”)



Dr. Susanne Stigberg
Assoc. Professor
Department for Information
Technology and
Communication, Østfold
University College

susanne.k.stigberg@hiof.no



Panelist Position

Barcelona
May 2024

- T. Bratteteig and G. Verne, "Does AI make PD obsolete? exploring challenges from artificial intelligence to participatory design," in *Proceedings of the 15th Participatory Design Conference: Short Papers, Situated Actions, Workshops and Tutorial - Volume 2*, in PDC '18. New York, NY, USA: Association for Computing Machinery, Aug. 2018, pp. 1–5. doi: 10.1145/3210604.3210646.
- A. Berditchevskaia, "Participatory AI for humanitarian innovation".
- V. Popova, *Co-creating Futures for Integrating Generative AI into the Designers' Workflow*. 2023. Accessed: Mar. 21, 2024. [Online]. Available: <https://urn.kb.se/resolve?urn=urn:nbn:se:kth:diva-343453>
- J. Greenbaum and F. Kensing, "Heritage: having a say," in *Routledge International Handbook of Participatory Design*, Routledge, 2012, pp. 41–56.
- A. Cai *et al.*, "DesignAID: Using Generative AI and Semantic Diversity for Design Inspiration," in *Proceedings of The ACM Collective Intelligence Conference*, in CI '23. New York, NY, USA: Association for Computing Machinery, Nov. 2023, pp. 1–11. doi: 10.1145/3582269.3615596.
- L.-Y. Chiou, P.-K. Hung, R.-H. Liang, and C.-T. Wang, "Designing with AI: An Exploration of Co-Ideation with Image Generators," in *Proceedings of the 2023 ACM Designing Interactive Systems Conference*, in DIS '23. New York, NY, USA: Association for Computing Machinery, Jul. 2023, pp. 1941–1954. doi: 10.1145/3563657.3596001.
- M. Muller and Q. V. Liao, "Exploring AI Ethics and Values through Participatory Design Fictions," *Hum. Comput. Interact. Consort.*, 2017.
- Robertson, T., Leong, T. W., Durick, J. and Koreshoff, T. 2014. Mutual learning as a resource for research design. Proceedings of the 13th Participatory Design Conference: Short Papers, Industry Cases, Workshop Descriptions, Doctoral Consortium papers, and Keynote abstracts - Volume 2. Windhoek, Namibia: Association for Computing Machinery.



Dr. Susanne Stigberg
Assoc. Professor
Department for Information
Technology and
Communication, Østfold
University College

susanne.k.stigberg@hiof.no

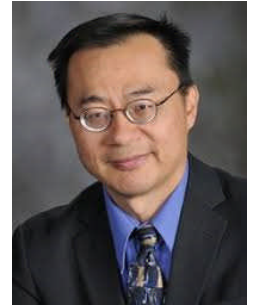


Panelist Position

Barcelona
May 2024

■ Challenges in Human-Machine Interaction and Adaptation

- Natural Language is one of the most versatile mediums. But how do we bridge the huge gap between NL and Machine's Language?
- **Challenge 1 – NL Ambiguous / lacking detail or context**
 - A NL sentence can have **multiple interpretations**
 - A NL sentence can mean something different under various **contexts**
 - A NL sentence can assume the machine knows **common sense**
- **Challenge 2 – Level of abstraction in NL can be too low / overly verbose**
 - How to **differentiate** necessary vs. unnecessary details?
- **Challenge 3 – Break down to sequence of machine-executable actions**
 - LLM can generate new tokens, but how to convert these tokens into proper sequence of **actionable primitives**?



Michael Hsiao
Virginia Tech

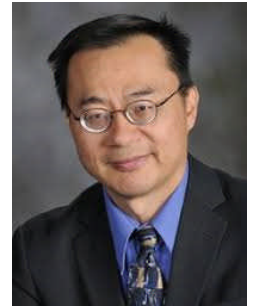


Panelist Position

Barcelona
May 2024

■ Challenges in Human-Machine Interaction and Adaptation

- Natural Language is one of the most versatile mediums. But how do we bridge the huge gap between NL and Machine's Language?
- **Challenge 1 – NL Ambiguous / lacking detail or context**
 - **Example:** X protects Y from Z
 - How does X protect Y? Does it shoot at Z?
 - Machine needs to **fill in** missing details
- **Challenge 2 – Level of abstraction in NL can be too low / overly verbose**
 - **Example:** The A under the gloomy sky slowly sneaks up on B behind the rocks.
 - How to interpret the gloomy sky, rocks, etc.
 - Machine needs to **filter out** unimportant/irrelevant details
- **Challenge 3 – Break down to sequence of machine-executable actions**
 - **Example:** When A touches B before C, ...
 - How to **sequence** the order of predicates and put them in multiple steps?



Michael Hsiao
Virginia Tech

