

# CSCW 2020: Workshop

## Better Supporting Workers in ML Workplaces

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### Goal of the workshop

The goal of this workshop is to examine machine learning and artificial intelligence in the workplace, as a design space. We aim to broaden enquiry into the role of ML and AI algorithms in the workplace by seeking contributions which are concerned specifically with contextual encounters with ML and AI, with an emphasis on such matters as:

1. The interpretive work that takes place around ML outputs. How do professionals and others make sense of these outputs and how do they deploy them in the context of their working lives? What is the role of the worker in ML based industrial settings and what are the organizational implications? How is work approached and accomplished in light of this technology? What strategies are used? What is missing in our current accounts and assumptions around this work?
2. Ethics and trust: what are the ethical dimensions of ML/AI in business settings? How can we design systems that look beyond the simple outcomes of immediately apparent design decisions and consider the full ecosystem. How can these systems engender trust of the work at hand and the system as a whole.
3. What narratives are produced when communicating the results to others? What communicative requirements might there be to best facilitate an understanding of ML and AI applications by those who might need it?
4. Design best practices: What are some guidelines for individuals and groups interacting with ML/AI applications in a professional, work or business domain? How can new ML/AI experiences be designed for, and integrated into the everyday goings on and existing technology in the workplace?
5. Research Methodologies. What new problems of access, research management and analytic procedure need to be dealt with when undertaking research in these areas? How do we equip researchers to navigate the organizational, legal, ethical and practical circumstances of work in light of these issues, and how can we best equip researchers take on the perspective of workers and their methods while understanding this work, and design for them [1 18]? What methods are currently used to study ML applications for consumer/personal consumption and what are their applicability and shortcomings? E.g. how do we design for ML futures [1 16], develop and evaluate best practices [1], account for both normative and contextual considerations [e.g. 18] among other ML related challenges? We will do so by connecting researchers and practitioners within the “human -ML interaction community” and include interested parties from the CSCW research community.

We want to encourage discourses that raise awareness of interactions with ML in the workplace at the individual, group and organizational level. We would like to eventually understand how people are currently doing their work in these settings, the issues they encounter. We further seek to explore futures that involve better designed systems for that work. In the workshop we will begin to explore that design space by sharing our work, and point to new and unexplored opportunities for further research.

#### *Expected contributions*

1. Position papers: opinions, visions, perspectives, points of view
2. Design studies: designing and evaluating ML/AI systems in organizational settings, challenges, lessons learned and best practices.
3. Methodological reflections: reports about field work, reflections on actively involving the worker in the design process, best practices and lessons learned.

The workshop will have a multidisciplinary emphasis, including work on the technical details of the ML/AI system itself (designing the system technically in light of what is happening in the workplace), understanding and improving UX for collaboration and individual use of ML/AI based business systems, Understanding and designing ML/AI business systems within organizations.

#### References

- [1] Amershi, Saleema, Dan Weld, Mihaela Vorvoreanu, Adam Fourney, Besmira Nushi, Penny Collisson, Jina Suh, Shamsi Iqbal, Paul N. Bennett, Kori Inkpen, Jaime Teevan, Ruth Kikin-Gil, and Eric Horvitz. 2019. Guidelines for Human-AI Interaction. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI '19). ACM, New York, NY, USA, Paper 3, 13 pages. DOI: <https://doi.org/10.1145/3290605.3300233>
- [2] Bossen, Claus Kathleen Pine, Gunnar Ellingsen, and Federico Cabitzza. 2016. Data-work in Healthcare: The New Work Ecologies of Healthcare Infrastructures. In Proceedings of the 19th ACM Conference on Computer Supported Cooperative Work and Social Computing Companion (CSCW '16 Companion). ACM, New York, NY, USA, 509-514. DOI: <https://doi.org/10.1145/2818052.2855505>
- [3] Cave, Stephen and Seán S. Áineartaigh. 2018. An AI Race for Strategic Advantage: Rhetoric and Risks. In Proceedings of the 2018 AAAI/ACM Conference on AI, Ethics, and Society (AI/ES '18). ACM, New York, NY, USA, 36-40. DOI: <https://doi.org/10.1145/3278721.3278780>
- [4] Columbus, Louis. 2019. Roundup of Machine Learning Forecasts and Market Estimates for 2019. Mar 27, 2019.
- [5] Crabtree, Andy, L Urquhart, J Chen. Right to an explanation considered harmful. Available at SSRN, 3384790, 2019
- [6] Fast, Ethan, and Eric Horvitz. 2016. 'Long-Term Trends in the Public Perception of Artificial Intelligence'. ArXiv:1609.04904v2 [Cs.CL], September. <https://arxiv.org/abs/1609.04904>
- [7] Harper, Richard. The role of HCI in the Age of AI. International Journal of Human-Computer Interaction, June 2019
- [8] Harrison, Teresa. Luis F. Luna-Reyes, Theresa Pardo, Nic De Paula, Mahdi Najafabadi, and Jillian Palmer. 2019. The Data Firehose and AI in Government: Why Data Management is a Key to Value and Ethics. In 20th Annual International Conference on Digital Government Research (dg.o 2019), Yu-Che Chen, Fadi
- [9] Herlocker, Jonathan, Joseph A. Konstan, and John Riedl. 2000. Explaining Collaborative Filtering Recommendations. In Proc. CSCW '00. ACM, New York, NY, USA, 241-250.
- [10] Jakobi, Timo, Gunnar Stevens, Nico Castelli, Corinna Ogonowski, Florian Schaub, Nils Vindice, Dave Randall, Peter Tolmie, and Volker Wulf. 2018. Evolving Needs in IoT Control and Accountability: A Longitudinal Study on Smart Home Intelligibility. Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. 2, 4, Article 171 (December 2018), 28 pages. DOI: <https://doi.org/10.1145/3287049>
- [11] Kizilcec, Rene F. 2016. How Much Information?: Effects of Transparency on Trust in an Algorithmic Interface. In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16). ACM, New York, NY, USA, 2390-2395. DOI: <https://doi.org/10.1145/2858036.2858402>
- [12] Lim, Brian Y. and Anind K. Dey. 2009. Assessing Demand for Intelligibility in Context-aware Applications. In Proc. UbiComp '09. ACM, New York, NY, USA, 195-204.
- [13] Lustig, Caitlin Katie

- Pine, Bonnie Nardi, Lilly Irani, Min Kyung Lee, Dawn Nafus, and Christian Sandvig. 2016. Algorithmic Authority: the Ethics, Politics, and Economics of Algorithms that Interpret, Decide, and Manage. In Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '16). ACM, New York, NY, USA, 1057-1062. DOI: <https://doi.org/10.1145/2851581.2886426>
- [14] Loi, Maria, Christine T. Wolf, Jeanette L. Blomberg, Raphael Arar, and Margot Brereton. 2019. Co-designing AI Futures: Integrating AI Ethics, Social Computing, and Design. In Companion Publication of the 2019 on Designing Interactive Systems Conference 2019 Companion (DIS '19 Companion). ACM, New York, NY, USA, 381-384. DOI: <https://doi.org/10.1145/3301019.3320000>
- [15] Neyland, Daniel. The Everyday Life of an Algorithm. Open Access e-books. Springer, 2019.
- [16] Nilsson, Tommy, Andy Crabtree, Joel Fischer, et al. Pers Ubiquit Comput (2019) 23: 287. <https://doi.org/10.1007/s00779-019-01210-7>
- [17] Rader, Emily, Kelley Cotter, and Janghee Cho. 2018. Explanations as Mechanisms for Supporting Algorithmic Transparency. In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18). ACM, New York, NY, USA, Paper 103, 13 pages. DOI: <https://doi.org/10.1145/3173574.3173677>
- [18] Randall, Dave, Richard Harper, and Mark Rouncefield. 2007. Fieldwork for Design: Theory and Practice (Computer Supported Cooperative Work). Springer-Verlag, Berlin, Heidelberg.
- [19] Stumpf, Simone, Adrian Bussone, Dymoa O'Sullivan. Explanations considered harmful? User Interactions with machine learning systems. ACM CHI 2016 Extended Abstracts.
- [20] Bratteteig, Tone and Guri Verne. 2018. 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 (PDC '18), Liesbeth Huybrechts, Maurizio Teli, Ann Light, Yanki Lee, Carl Di Salvo, Erik Grönvall, Anne Marie Kanstrup, and Keld Bødker (Eds.), Vol. 2. ACM, New York, NY, USA, Article 8, 5 pages. DOI: <https://doi.org/10.1145/3210604.3210646>
- [21] Webb, Helena, Menisha Patel, Michael Rovatsos, Alan Davoust, Sofia Ceppi, Ansgar Koene, Liz Dowthwaite, Virginia Portillo, Marina Jirotko, Monica Cano,(2019) ““It would be pretty immoral to choose a random algorithm”: Opening up algorithmic interpretability and transparency”, Journal of Information, Communication and Ethics in Society, <https://doi.org/10.1108/JICES-11-2018-0092>