

HCI International 2023 Workshop Proposal Submission

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Skilled Workers, Knowledge Transfer, & AI

AI is expected to disrupt how people work, including those who perform complex physical labor through the use of tools and machinery. While many point to AI's potential negative impacts, other scholars express an opportunity to introduce "wise interventions" so that AI may benefit, not displace, skilled-trade workers (Tyson and Zysman, 2022, p. 57). This topic has critical and timely economic and social relevance as skilled worker shortages call for accelerated workforce training and upskilling. Our study focuses on the area of human-to-human knowledge transfer (KT) between more-experienced, expert workers and less-experienced, novice workers (Kalleberg, 2009). To better understand the nature of skilled trade work and how skilled-trade workers transfer knowledge, we engaged human-centered design principles and conducted 22 semi-structured interviews and in-field observations with workers and their supervisors across three departments at a municipal government. Our study reveals that tacit and explicit KT does take place between expert workers and novice workers. Participants also cited measurable impacts of KT on external measures such as safety. Our research seeks to inform future efforts to digitize human-to-human knowledge exchange and to explore how ethical AI can accelerate training to benefit workers while also increasing the number of available workers. We also hope to investigate the potential contributions of autonomous systems. Creating a better understanding of KT between skilled-trade workers could provide opportunities to workers and increase equitable access to these much-needed jobs.

References

- Kalleberg, A. (2009). Rethinking the sociology of work, workers and the workplace. *Labour & Industry: A journal of the social and economic relations of work*, 19(3), 29-48.
- Tyson, Laura D., and John Zysman. 2022. "Automation, AI & Work." *Daedalus* 151 (2): 256–71. <https://www.jstor.org/stable/48662040>.