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AI for teams: The future of assisted collaborative work

Axel Niklasson

HCID, City, University of London

axel.niklasson@city.ac.uk

In this brief overview of my ongoing PhD studies I give an introduction and brief background to my research interest, touch on my empirical work and early findings, and finally account for my anticipated next steps and expected contribution.

My ethnographic fieldwork is focused on the role of artificial intelligence in the workplace, building on well-established themes in CSCW and also identifying new challenges in observations of distributed agencies and skill in collaborative work. Grounded in an increased and varied academic interest in the environments, policies and rights related to the future of work and a strong industry narrative around ways of work made possible by technology, I am interested in the deep change aspirations of artificial intelligence and machine learning applications and their role in a push for “digital transformation.” (CHI, 2019; National Science Foundation, 2019; Butterfield, 2018; Microsoft, 2018)

I seek to complement extensive but seemingly narrow studies of e.g. bias, trust and explanation in specific implementations where these fail to capture concerns we should have for work. Broadly, I want to ask, What is it that we’re trying to digitally transform with artificial intelligence? What happens in that transformation? How can we zoom out and expand our frame of reference?

Recent discussion around future automation and AI has focused on the impact on occupations as varied as radiologists, lawyers, gardeners and drivers, (Alkhatib et al., 2017; Stone et al., 2016; Brynjolfsson and McAfee, 2016, e.g.) but little attention has been paid to the office team, and what impact the introduction of AI in collaborative tools may have on practices such as decision support and

performance management. (Woyke, 2018; Booth, 2019) The need to investigate how AI affects teamwork and associated potential new ways of working remains an important research objective and consequently the aim of my studies is to explore collaboration in and between organisational teams, how technology features in these collaborations and in particular the role and potential of AI-enabled assistance in teamwork.

As well as enriching the understanding of team-working at a seemingly pivotal moment in collaborative tools and services, I expect my research to deepen the understanding of people's collaborative practices with AI, and orient insights towards future design trajectories for workplace collaboration tools.

Empirical work and early findings

In my PhD I have reported on ethnographic fieldwork at MediaCo, an international news organisation head-quartered in London. Embedded with a newsroom technology team over a period of five months in 2019, I had an interest in questions of assisted collaborative work and team practices.

With attention to the role of the communication tool Slack (Slack, 2019) I observed the team in their daily effort to roll out Newscope, an article writing and work-flow tool for the MediaCo journalists. The activities included formal and informal meetings and conversations; team planning, feature kick-offs and user research. The observations were complemented by contextual conversations and semi-structured interviews with software engineers, designers, business analysts, project- and product managers and others involved with the Newscope team.

In an ongoing reflexive, interpretative analysis I took an interest in how participants made sense of work in practice, how collaborative tools afforded skilled practice, and how skilled practice was made visible and accountable. (Marcus, 1995, e.g.)

As an example, one report departed in how the communication data accumulated by tools like Slack might be used to provide employers with "Operational Insight" or "Workplace Analytics" and how breaking apart Slack data and the infrastructure in which it is entangled implies losing sight of fundamental parts of the practice. I argued that skilled practice is distributed across the people and things entangled in this infrastructure; and that as a consequence, any attempt to augment or assist the Newscope team without a continuous attunement to the distribution of skill and the infrastructure will fail to take the organisation seriously.

Complementing an image of discrete, blackbox-able skill prevalent in much study of artificial intelligence, in an attempt not to presume the strict categories of 'human' or 'technology' as observable units, I suggested to expand the frame and develop a notion of skill as a property not of the individual but of "the total field of relations constituted by the presence of the organism-person, indissolubly body and mind, in a richly structured environment." (Ingold, 2000)

Drawing on infrastructure studies (Star and Ruhleder, 1996; Jackson and Barbrow, 2013, e.g.) I claimed that work and collaboration technologies such as

Slack are deeply entangled in the organisational infrastructure; that the skilled practice of a team is distributed across people and things in this infrastructure; and that for these reasons any effort to augment or assist collaborative work without considering characteristics of skill in infrastructure can not take full account of what we effectively regard as work.

Next steps

While continuously revisiting my data and refining my analysis, I am now planning for continued studies and expect to return to the field shortly.

Iterating on previous empirical findings I will take a more specific interest in how skilled practice is distributed across the organisational infrastructure, anticipating to extend the participant scope beyond the developers of the Newscope system and include e.g. journalists and editors, allowing study of “objects” such as Slack channels or articles as they join together communities of practice.

The resulting findings and analysis, a further expanded view on the organisational infrastructure and the distribution of skilled practice will provide a base for an intervention. Provisional plans include designing and developing this as a Slack integration based on communication data, with the potential for co-design (Simonsen and Robertson, 2012, e.g.) and related activities in the Newscope team and elsewhere in the MediaCo organisation.

Expected contributions

Building on well-established themes in CSCW, with empirical observations and analysis uncovering new challenges, I expect to contribute to the development of theory in questions of e.g. infrastructure and skilled practice in the context of workplace studies.

With a keen eye to the implications of these theoretical questions and through my own design and development efforts I will pay close attention to how my research speaks to the design of AI and data-driven collaborative systems.

In sum, I expect to contribute to an increased understanding of the problem space relevant to the design of features based on machine learning and data in collaborative tools.

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