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A STUDY OF INDUSTRY INFLUENCE IN THE FIELD OF AI RESEARCH

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Extended abstract

> "*You've got this enormous amount of money. That has gravitational influence for universities. Every university now has an AI institute and an AI ethics institute.*"[1]

This extract is from an interview study (n = 90) we conducted with academics affiliated with university-based AI-branded research networks.[2] In this paper, we explore how these academics, whose affiliations posit them as 'AI researchers', mobilise and resist industry interests. The research question to which this paper is addressed is: *how do university-based academics in the field of AI experience and mediate industry influence in their research?* We consider also the broader characteristics of the AI research field—a field that sits at the intersection of industry, government, and media interest (Williams et al., 2023).

Following the Bourdieusian tradition, we understand 'AI research' to be a field of knowledge production, which takes place within social spheres with distinct norms and traditions (Camic, 2011; Camic & Gross, 1998). We direct our study towards research networks which utilise 'AI' when describing their focus, treating these networks as key actors in the process of demarcating the AI field (Abbott, 1988; Bourdieu, 2008).

Method

[1] An interview extract from a HaSS academic affiliated with an AI-branded research network, interviewed during this study.
[2] We refer interested readers to 'The benefits of being between (many) fields: mapping the high dimensional space of AI research', forthcoming in *Big Data & Society*.

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Semi-structured interviews with 90 academics affiliated with AI-branded, university-based research networks were conducted. Six research networks were selected, with two each in the US, UK, and Australia. In each national context, one inter- and one intra- network was selected.

Participants were recruited through direct outreach and snowball sampling, with an equal number of participants recruited from each national context. Interviews were undertaken between May 2022 and March 2023. Participants were asked to explain their research goals and relationship to established disciplines, and to describe their approach to navigating the university, including career progression, teaching, and research funding.

Interview data was analysed using thematic analysis, reflecting a broadly constructionist perspective (Braun & Clarke, 2006; Clarke & Braun, 2017). A mix of deductive and inductive coding was employed (Byrne, 2022; Clarke & Braun, 2017). We collected interview extracts under broad themes, deductively hypothesised from our understanding of fields and existing research on industry influence in the AI field. We inductively coded data extracts under these themes and iteratively organised codes into themes and sub-themes.

Findings

We find that national research funders and university bureaucracies incentivise industry investments in AI research, both at the level of researchers, for whom career progression may be tied to their ability to broker intersectoral collaborations, and at the level of research networks, whose funding may be tied to their facilitation of industry-academic partnerships. We argue that university-based AI research networks primarily operate as mediators between industry, government, and university actors, and highlight the role national research investment strategies play in creating an enabling environment for industry influence of AI research.

> "[My network] *has a curious reluctance to define what AI is, and particularly what it isn't. AI has become so mainstream... if you do algorithms, then you kind of do AI...* [Funders] *run the risk that everybody suddenly decides that what they've been doing for the last ten years is AI after all.*"[3]

Our findings reflect ongoing definitional debates about what constitutes both AI and legitimate goals for AI research (Jaton & Sormani, 2023; Suchman, 2023). We find that the AI field is unstable, and maps poorly onto traditional disciplinary or sectoral boundaries. As such, we conceptualise AI research as an interstitial field, with knowledge production occurring in the liminal space between more established fields, and across a range of sectors and professions (Eyal, 2013; Stampnitzky, 2011).

[3] Extract from a CS academic interview.

> "*If you think about AI in, and around, the university it is less a network… more an ecosystem of… publics, community organisations, SMEs, large corporates, other universities, research institutes, schools… the analogy is more like a coral reef.*"[4]

We argue that the field of AI research is a site through which industry, government, and university actors renegotiate their shared boundaries and interdependencies. How university-based academics in the field of AI experience and mediate industry influence prefigures relations between the broader university, government, and industry sectors.

> "*If I'd freely pursued my own intellectual interests, I'd look more like a traditional humanities scholar. I look the way I do because of a pragmatic choice to… build the kind of career that the institution would recognise, that would… shape a research agenda that could get funded.*"[5]

Industry influence, however, is not straightforward. Interview participants described how universities and national funders incentivise 'impactful' research, which they operationalise as applied and intersectoral research. Industry influence is thus enabled by an orientation within the university sector towards industry partnerships. Precarious employment within the university sector provides an additional enabler for industry influence: participants described their academic careers as contingent, necessitating movement between industry and university employment opportunities. The ability to develop and maintain partnerships with industry is thus seen by university-based AI researchers as critical to their long-term careers, funding opportunities, and research projects.

> "[National funders have been] *divesting from the humanities... AI ethics has emerged as… a legible, valuable topic to funders. You have some of the biggest corporations in the world* [saying] *we need AI ethicists. You see this little bit of money available to the humanities, and humanities researchers* [are] *rebranding themselves as a social responsibility or AI ethics researchers.*"[6]

Participants also discussed the risks of industry influence. Given the importance of industry investment to their own research, several participants understand risk in terms of waning industry interest in their research. These participants see the role the media sector and university-based research networks play in 'hyping' AI research as a significant threat to their research—'hype' risks creating unrealistic industry expectations. Other participants described how they have adjusted their research agendas to align with industry interest. For these participants, industry influence risks having a stifling effect on promising AI research directions—to mitigate this, participants contest narrow definitions of 'AI', and reframe their research activities to appear more aligned with areas of industry interest.

Finally, we observe internalisation of industry logics in the way industry participants describe their research objectives and the objectives of the research networks they are

[4] Extract from a STEM academic interview.
[5] Extract from a HaSS academic interview.
[6] Extract from a HaSS academic interview.

affiliated with. Participants described their research goals in terms of ‘scale’ and ‘generalisability’, which are both conceptualised as widespread use or engagement with their research outputs (e.g. new algorithms, new models, new datasets). To achieve scale, participants seek to move across application domains, working at a level of abstraction they believe will enable their research outputs to be implemented across many local contexts. In effect, this pattern of research mirrors the commercial logic of technology firms, who similarly extract value through development of scalable digital platforms that bridge local contexts.

Broader impacts

Industry influence over AI research is a source of significant concern (Abdalla & Abdalla, 2021; Young et al., 2022). These concerns reflect an understanding of AI research and the development of AI systems as deeply socially consequential (Shelby et al., 2023). Industry influence may threaten the independence of AI researchers, and the ability of researchers to question industry imperatives (Young et al., 2022) or pursue alternatives to Deep Learning (Klinger et al., 2020). Given the intertwining of interests between US-based industry actors, US government agencies, and elite US-based universities, industry influence may also threaten the democratic aspirations of AI research—industry influence is associated with the concentration of AI research in elite Western universities (Ahmed & Wahed, 2020). Within this context, this paper contributes an empirical description of the ways in which industry influence moves through and structures the field of AI research, highlighting the significance of national research funders’ impact agendas in enabling industry influence.

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