
Hacking Academia: How Academic Communities are Evolving a New Breed of Hackathon

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Abstract

Adapted from their roots in open source and tech industry cultures, hackathons that facilitate intensive collaboration or co-working are increasingly prevalent in academic communities. Many features of hacking culture challenge entrenched norms for pedagogical models and research, so expectations and norms around this new breed of hackathon are still emerging. Our ethnographic study follows multiple iterations of academic hackathons, including organizers' sensemaking processes toward developing best practices. Based on extensive participant observation, interviews with organizers, and participant survey responses, we analyze some of the factors that motivate participation in academic hackathons, as well as how their evolution relates to broader challenges in academic institutions.

Author Keywords

hackathon; ethnography; collaboration; co-working.

Introduction

As ethnographers embedded within academic data science environments, numerous hacking events have intersected our study of the emerging culture and practice of data-intensive scientific discovery. We conducted more than 175 hours of participant observation at multiple types of hackathon events, including multiple iterations of academic hack weeks. We began characterizing the sociotechnical di-

mensions in a preliminary typology, which we workshoped with hackathon researchers at CSCW [1]. In this work, we focus our analysis on academic hack weeks, an example of the communal hackathons we described in our initial typology. Like other communal hacking events, hack weeks are designed to build out infrastructure, practices, and culture for a particular community, in this case members of an academic discipline or sub-field. Our access to longitudinal data from multiple iterations of various hack weeks, as well as our ability to triangulate analysis using survey responses from participants, have allowed us to explore some of the motivations that draw participants to hack weeks and how these events are perceived to fit into the broader ecology of academia and scientific exploration.

Motivations for Participation

Given that we initially described hack weeks as an example of *communal* hackathons, it seems intuitive that finding community emerged as a core motivator for participating in these events. Perhaps less intuitively, the community of practice that comes into being at these hack weeks draws participants largely from academic and research institutions with a particular disciplinary focus, which might be considered fairly niche communities in and of themselves. The particular community that participants and organizers describe seeking at hack week events is even more specialized, and perhaps it is the unique and uniquely bounded “space” of hack weeks that afford the evolution of practices and culture for this community.

The Hack Week Community

Many participants referenced getting to know “like-minded” peers as a central component of the hack weeks. One participant described the event as, “An opportunity to meet like-minded scientists in the field and learn about tools and methods to benefit our research.” After this phrase cropped

up repeatedly in surveys and chats, we heard from one participant in more detail what it meant to be in a community of “like-minded peers.” Responding to our inquiries about what makes the hack week community distinct within academic communities, the participant explained,

I guess I would say it is an “openness to new tools and techniques.” So in both academia and industry where I’ve worked before, there is this sense that people are trying to build new knowledge in the field, but the ways of doing that are set. So everyone has their standard places to go for data, and their standard analysis routines, and then the data hopefully signals some new insight. But here, people are much more interested in working reproducibly and recognizing the value that new techniques and tools can bring to the field in terms of the questions we’re able to answer. [Paraphrased except where text is in quotes.]

Hack week organizers have also commented on the opportunity they see for hack weeks to offer the sort of community that allows “computationally-minded” researchers to “break from the isolation of their academic departments” [3]. Both participants and organizers have expressed enthusiasm around the possibility that these events may spark new connections and collaborations both within and across disciplines, and build infrastructure that could support the opening of new lines of scientific inquiry.

“Space” for a Different Kind of Work

A related theme that we have seen emerge from multiple iterations of academic hack weeks is an interest in taking advantage of the “space” these events create to spend time on work and learning that are difficult to prioritize in their

normal work settings. In a survey about one of the hack weeks, a participant described the event as: “A workshop for learning new computational techniques and to experiment with new projects that you might not otherwise have time for.” Our reflections about the “space” or environment that hackathons create for a particular mode of engagement align with prior work focused on the “publics” created by hackathons. According to Fiore-Gartland and Geiger, the publics that may be created by hackathon events represent a “respite from day-to-day research activities and provide a low-stress venue to learn new skills and attempt high-risk projects.” [2]. Often when we spoke with participants who lived locally, they emphasized the value of having this time dedicated to learning and practicing new skills, when they wouldn’t be interrupted with emails or normal day-to-day tasks. A unique “space” apart and community of “like-minded” peers surfaced from our thematic analysis as strong throughlines across multiple iterations and different types of hack week.

Hackathons and Institutional Change

Academic hack weeks have grown in popularity throughout our observation, attracting larger applicant pools and spreading across disciplines and fields. It seems clear that participants and organizers are realizing meaningful outcomes through these events. One of the aims of our ethnographic work is to recognize work that falls outside conventional academic incentive structures (e.g., publications) and to observe how such work is valued by the communities involved. As such, we were interested in how hackathons relate to the ongoing changing of well-established institutions within academia.

One possible lens is to think of them as stopgap measures that are filling some need or needs that are not being met by established institutions. They might be a short-term fix

until our institutions can evolve and catch up with the times and grow to fill that need. An academic hack week could indicate, for example, that we don’t have sufficient formal course offerings in advanced computational methods. We could consider which needs are being served through these time-bounded, relatively low-resourced hackathon events and what that says about shortcomings or gaps in our institutional configurations.

Another way we can try to make sense of both the diversity and commonalities we see across various hackathon events is through a sociomaterial lens that sees this phenomenon as being interwoven with the material exigencies of computing environments. One of the things that is distinctive about academic data science is that most projects evolve in a unique, configurable, and customizable software environment. It’s not a one-size-fits-all landscape, and the rapid evolution of computing capabilities and tools requires researchers to expand their knowledge and skills constantly. In part, hackathons are a response to these exigencies. Since you can’t just learn something once, academic data scientists need nimble and flexible pedagogical approaches and structures like hackathons to support the kind of ongoing learning that is required.

These lenses correspond to the various ways in which the term “hack” is often employed. A hack can be a quick fix, something that works well enough for now to patch up a problem, but should be addressed systematically later. And hacking is also often used almost synonymously with coding or programming, indicating a mainstreaming of these activities and skills, which seems in sync with viewing hackathons through a lens of emergent adaptations that are being normalized in response to material exigencies.

Conclusion

Over multiple iterations, academic hack week organizers have assessed how well the events are serving the needs of their respective communities. They have adapted and redesigned various components to better align with their objectives for developing community infrastructure and to better support participants in acquiring and practicing new skills. One hack week is transitioning into a multi-week “hackademy,” while others have changed and redeveloped tutorial modules over the years. Whereas some other types of hackathon may have a relatively stable structure over numerous iterations, the progression of hack week design reveals pathways for small, dedicated communities to ensure that their evolving needs are met. The success of academic hack weeks also highlights the opportunity for communal hacking events to be drivers of institutional change.

Author Bios

Margaret (Meg) Drouhard is a PhD candidate in the Department of Human-Centered Design and Engineering at the University of Washington (UW). She works with Dr. Cecilia Aragon in the Human-Centered Data Science Lab. Along with other researchers on the ethnographic team at the eScience Institute at UW, Meg studies the emerging practice and culture of data-intensive scientific research. As part of her ethnographic work, she has observed and participated in several academic and community-led hackathons.

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