robots.txt: An Ethnographic Investigation of Automated Software Agents in User-Generated Content Platforms

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Abstract: This dissertation investigates the roles of automated software agents in two user-generated content platforms: Wikipedia and Twitter. I analyze "bots" as an emergent form of sociotechnical governance, raising many issues about how code intersects with community. My research took an ethnographic approach to understanding how participation and governance operates in these two sites, including participant-observation in everyday use of the sites and in developing bots that were delegated work. I also took a historical and case studies approach, exploring the development of bots in Wikipedia and Twitter. This dissertation represents an approach I term *algorithms-in-the-making*, which extends the lessons of scholars in the field of science and technology studies to this novel domain. Instead of just focusing on the impacts and effects of automated software agents, I look at how they are designed, developed, and deployed — much in the same way that ethnographers and historians of science tackle the construction of scientific facts. In this view, algorithmic agents come on the scene as ways for people to individually and collectively articulate the kind of governance structures they want to see in these platforms. Each bot that is delegated governance work stands in for a wide set of assumptions and practices about what Wikipedia or Twitter is and how it ought to operate. I argue that these bots are most important for the activities of collective sensemaking that they facilitate, as developers and non-developers work to articulate a common understanding of what kind of work they want a bot to do. Ultimately, these cases have strong implications and lessons for those who are increasingly concerned with "the politics of algorithms," as they touch on issues of gatekeeping, socialization, governance, and the construction of community through algorithmic agents.

Geiger, R. Stuart. (2014). "Bots, bespoke code, and the materiality of software platforms." *Information, Communication, and Society* 17(3). http://stuartgeiger.com/bespoke-code-ics.pdf

Geiger, R. Stuart. (2016). "Bot-based collective blocklists in Twitter: the counterpublic moderation of harassment in a networked public space." *Information, Communication, and Society* 19(6). http://stuartgeiger.com/blockbots-ics.pdf

Geiger, R. Stuart. (2017). "Beyond opening up the black box: Investigating the role of algorithmic systems in Wikipedian culture." *Big Data & Society* 4(2). http://stuartgeiger.com/algoculture-bds.pdf