Not entirely dead labour: worker-led automation in software production

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Abstract

This paper presents research from an ongoing study on automation in software production. The goal of this study is to demonstrate that automation in software production is qualitatively different from automation in the manufacturing industry–the sector where most critical sociological research on automation has been done (Krzydzinski 2022) and algorithmic management in the service industry (Altenried 2024). I present two distinguishing factors. The first factor is that in software production, workers have control over the means of automation. Indeed, they can and do automate their own work. This is possible because the requisite technology is simply software that they can build as needed. This stands in stark contrast to the kinds of heavy machinery required to automate industrial manufacturing and algorithmic management systems in the service industry. The second factor is automation is therefore a quotidian practice. It is an everyday practice for many types of software workers, and for some it is the main focus of their job.

This discussion draws on empirical research (interviews and workplace observation) conducted by myself with three types of software worker. Software developers are the backbone of the tech industry and an increasingly "blue collar" category of software worker. They build applications, platforms and all kinds of digital infrastructure. Data scientists are perhaps the most elite category of software worker at the moment as they build machine learning models, such as generative AI models like ChatGPT. Technical artists are a recently emergent category of digital labour which combines the artistic work of a digital artist with the programming capacities of a software developer. They use this skill set to automate digital artwork, producing 3D models and environments at scale. Technical art began in video games (Chia 2022) but is now involved in AI production as 3D simulations are being used to generate synthetic data for training machine learning models, amid industry fears of a "data shortage" (Steinhoff 2022).

While thus far, worker organizing in the elite strata of software work remains low, I suggest that the control over the means of automation which these workers possess means that they occupy a chokepoint of potential fruitful resistance–and upheaval. Automation is the job of these workers–not something that is done by machines. This suggests that organized software workers could lead a historic shift by which automation becomes a process under the control of labour, rather than capital.

Keywords: automation, software, artificial intelligence, machine learning

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