Process automation in software engineering

Today's software systems are significantly large, complex, and critical. It could be argued that only through the use of automated approaches to software engineering can such systems be efficiently developed and maintained. Agile approaches to software development recognise the importance of automation, and it is increasingly used to support several aspects of the development process. It could be argued that automation will even influence how we write code, through artificial intelligence code generation tools such as GitHub Copilot[1].

However, historically the increased use of technology and automation has caused profound changes in the labour market and, temporarily at least, displaced people from jobs. For example, during the Industrial Revolution machines allowed work to be completed much quicker and cheaper than using traditional methods.

Discuss whether the introduction of extensive process automation is likely to have the same consequences for software engineers. If you don't think it will, explain why not. If you think that it will reduce job opportunities, is it ethical for the engineers affected to passively or actively resist the introduction of this technology?

Further reading:

Fleming, S. (2020) A short history of jobs and automation, World Economic Forum. Available at: https://www.weforum.org/agenda/2020/09/short-history-jobs-automation/ (Accessed: 5 September 2022).

Loukides, M. (2020) Automated Coding and the Future of Programming, O'Reilly Media. Available at: https://www.oreilly.com/radar/automated-coding-and-the-future-of-programming/ (Accessed: 5 September 2022).

Instructions

Write an essay of 1,000 (±10%) words that:

- Helps the reader to gain an understanding of the concepts involved in the topic area.
- Provides an overview of the current state in the topic area, supported by practical examples.
- Clearly articulates your views on the issues involved.

The due date for your submission will be communicated on the module site. The grading rubric is available in the main assessment document.

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[1] https://github.com/features/copilot