Paper Overview

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Summary

In modern software, managing external dependencies has become so difficult that older projects usually have many dependencies that are completely unused in the code. When running continuous integration (CI), the project is still built with these unused dependencies. By analyzing a data set of git commits, this study finds that 56% of CI build time is spent on unused dependencies. Furthermore, the researchers introduce and evaluate a strategy to cut down these unused dependencies, called `Dep-sCImitar`.

Evidence

Empirical. The researchers analyze a data set of commits from GitHub npm projects using the GHA CI service. They select the commits that purely affect unused dependencies, and the CI build times of these commits. From this, they calculate the percentage of build time that is spent on unused dependencies. They also analyze 6 projects in more detail.

Strengths

The paper offers useful insight into wasteful CI practices, and introduces a new approach and tool that might greatly reduce wasted CI build time for npm projects.

Weaknesses

The researches exclusively base their conclusions on Javascript npm projects. Their findings might not generalize well to other types of projects.

Evaluation

I would recommend acceptance to Proceedings of the ACM on Software Engineering.

Quality of writing

The quality of writing is adequate. The authors use a mix of shorter and longer sentences that feels natural.

Questions

1. The researchers only looked at Javascript npm dependencies. To what extend do you think that their findings will generalize to other programming languages?
2. Can you mention some ideas for further work on this topic?