

先端科学技術研究科 修士論文要旨

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論文題目	Understanding The Relationship between Proficient Code and the Zen of Python		
要旨	<p>Python's status as a leading programming language owes in part to its emphasis on proficient code, which significantly enhances software quality and effectiveness. This study addresses a critical gap in the literature: while prior studies have highlighted the utility and growing adoption of proficient code, they have not extensively explored its overall impact on Python projects. By analyzing whether the practice of adding proficient code follows the principles stated in Zen of Python, the study employs tools like 'pycefr' and 'pygount', and uses Association Rule Mining to scrutinize four major Python projects.</p> <p>The research questions addressed are: (RQ1) When does most code become proficient? Under RQ2, examining the impact of proficient code, two aspects are considered: (RQ2a) How does proficient code impact the density of the code? (RQ2b) How does proficient code affect its surrounding code? This study finds that proficient code is predominantly introduced during minor version updates in Python projects' semantic versioning. The introduction of proficient code generally leads to an increase in the number of lines of code, decreasing the density of code and aligning with a preference for sparseness. Moreover, the concurrent addition of simpler, basic code with proficient code suggests a tendency towards simplifying the overall codebase. This thesis envisions future research exploring strategies for optimizing the balance between code simplicity and functionality, in light of the prevalent introduction of proficient code alongside simpler constructs in Python projects.</p>		