TU Clausthal

Abschlussvortrag Masterarbeit Leela Naga Sabharinath Kona

„Investigate Security Issue Reports on GitHub and Classify them into CWEs“

GitHub is one of the most prominent tools for modern software development, providing a robust platform for collaborative work, version control, and code management. It facilitates both open-source and private projects, ensuring secure access. GitHub allows for efficient tracking and resolution of issues by enabling teams to mark and discuss them within the repository. While it helps quickly categorize issues, such as bugs or duplicates, it doesn't automatically flag security-related issues, necessitating considerable manual effort from teams to handle them. This research aims to leverage machine learning techniques for the automatic classification of GitHub issues into security-related and non-security-related categories. The classification model's performance is refined through model tuning and hyperparameter optimization. Additionally, the research proposes an automatic classification of security vulnerability issue reports into the top 10 most frequent Common Weakness Enumerators (CWEs) or "Other" categories using text-based multi-class classification methods. This will shed light on the security vulnerabilities associated with the issue reports and ultimately empower software developers with root cause analysis to streamline their security efforts and enhance software integrity.

Betreuer der Arbeit:	Prof. Dr. Mohammad Ghafari, PD Dr. Christoph Knieke
Datum:	Freitag, 22. März 2024, 10:00 Uhr
Ort:	Online-Meeting über BBB
	Link: https://webconf.tu-clausthal.de/rooms/gjz-bsm-lu9-z5g/join