



## **Abschlussvortrag Masterarbeit Muhammad Farrukh Nazir**

„Investigation of Factors Influencing the Resolution of Security Issues“

Issue reports are the main tool used to prioritize and address tasks. Issue reports should carefully explain the elements developers need to know to fix issues. Our objective is to comprehend the features of issue reports in open-source projects and identify factors that can enhance issue reporting and management. We analyzed 2,423 security issues reports across 63 repositories, and conducted a detailed manual analysis of 333 security issues. The factors examined include the issue title, issue description, issue complexity, number of comments, bug reporter, participants involved, and the categorization of the bug.

Investigation reveals that certain factors play a critical role in the timely and effective resolution of security issues. Security issues with clear titles, detailed descriptions, and lower complexity tend to be resolved more quickly. Bug reporter's identity and number of participants in the issue also correlate with the resolution of issues. Furthermore, categorizing bugs accurately helps prioritize and address them efficiently. These insights are crucial for project maintainers to handle security vulnerabilities and for bug reporters to efficiently report the issue. Future research may expand upon this work by incorporating machine learning techniques to automate identifying and prioritizing security issues, or by analyzing a broader array of repositories to validate and extend the current findings.

Betreuer der Arbeit: Prof. Dr. Mohammad Ghafari, PD Dr. Christoph Knieke

Datum: Montag, 30. September 2024, 15:00 Uhr

Ort: Online-Meeting über BBB

Link: <https://webconf.tu-clausthal.de/rooms/l23-biu-nx1-idu/join>