Vikram N. Subramanian

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Education

University of Waterloo Sept. 2018 – Apr. 2022
Honours Software Engineering Co-op *Waterloo, ON*

- Data Structures and Data management (CS240)
- Introduction to Database management (CS348)
- Sequential Programs (Introduction to Compilers- CS241)
- Introduction to Statistics and Probability (STAT206)
- Engineering Calculus I & II (MATH117 & MATH119)

Technical Skills

Languages: Python, C/C++, Groovy, Bash, SQL
Technologies: Docker, Jenkins, GIT, AWS, Flask, RESTful Services, Microsoft SQL Server, PostgreSQL, MongoDB, Pandas, NumPy, Matplotlib, Jira

Research Publications

I have been working part-time with Prof. Mei Nagappan at the David Cheriton School of Computer Science, University of Waterloo since January 2019.

Under Review

- Vikram N. Subramanian, Shayon Banerjee, Yinuo Wang, Yuvika Khardenavis, Meiyappan Nagappan, Glenn Wurster, Scott Cosentino. (2021). Apply+ : A tool to intelligently apply security patches. Submitted to SEIP track at ICSE2021. https://github.com/ApplyPlus/ApplyPlus

Publications

- V. N. Subramanian, I. Rehman, M. Nagappan and R. G. Kula,"Analyzing First Contributions on GitHub: What do Newcomers do," in IEEE Software, doi: https://doi.org/10.1109/MS.2020.3041241.
- Vikram N. Subramanian. 2020. An empirical study of the first contributions of developers to open source projects on GitHub. In Proceedings of the ACM/IEEE 42nd International Conference on Software Engineering: Companion Proceedings (ICSE '20). Association for Computing Machinery, New York, NY, USA, 116–118. DOI: https://doi.org/10.1145/3377812.3382165

  Citations: 1 | **Winner of the ACM Microsoft Student Research Competition- Undergraduate at ICSE2020**
- Lakshmanan Arumugam, Vikram N. Subramanian, and Meiyappan Nagappan. 2019. SEGarage: A Curated Archive for Software Engineering Research Tools. SIGSOFT Softw. Eng. Notes 44, 3 (July 2019), 13. DOI: https://doi.org/10.1145/3356773.3356777

Internships

Research Intern- Office of the CTO Sep. 2020 – Dec. 2020
Wind River Systems *Ottawa, ON*

- Built a proof-of-concept data pipeline to collect, process and visualize data from different Yocto Project(an embedded Linux distribution) builds using MongoDB, Python and Flask to find bottlenecks in builds and differences between builds.
- Created scripts to run and parse results from Bear (compilation database generator), and used the data procured to map dependencies between different files in a Make build and create a stack trace of calls in an attempt to find serialization points and optimizations.
- Created scripts to automatically create build instructions for the Ninja build system from Make files and build information produced by Bear for C projects.

Software Engineering Intern Jan. 2020 – Apr. 2020

Thomson Reuters Labs *Kitchener, ON*

- Optimized and parallelized scripts that run the Flair NLP model to make them 150% faster and saved over 400 hours of processing time.
- Built a pipeline to extract over 25 million rows of legal data from a Microsoft SQL Server, run Flair and Spacy NLP models to remove personal information and then analyze them using Pandas.
- Designed and developed an API endpoint for an NLP model that is currently being used by 3 internal teams using Flask, Docker, SQLite and AWS.

DEV-OPS Engineering Intern May 2019 – Aug. 2019

Sandvine Inc. *Waterloo, ON*

- Built a pre-merge CI pipeline for 4 repositories to run a battery of tests affecting 50+ commits/week using Groovy in Jenkins.
- Incorporated Docker-compose in a product's build system and reduced the number of instructions required to build services containing multiple docker images.

Awards

Winner of the ACM Microsoft Student Research Competition at ICSE2020

- Conducted an empirical study of first-time open source contributors by scraping GitHub and analyzing the collected data to find meaningful conclusions.
- News articles: https://cs.uwaterloo.ca/news & https://uwaterloo.ca/software-engineering/news/

Winner of Hack the North 2019 at The University of Waterloo (1500+ Participants)

- Built a VSCode extension that produces relevant code snippets by searching for code semantically similar to what the user is writing in a large collection of open-source repositories.
- Link to project: https://github.com/vikramsubramanian/complete

President's Scholarship, University of Waterloo (2018) - $5000