

Vikram N. Subramanian

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EDUCATION

University of Waterloo

Sept. 2018 – Apr. 2023

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.

Draft to be submitted

- Vikram N. Subramanian, Shayon Banerjee, Yinuo Wang, Yuvika Khardenavis, Meiyappan Nagappan, Glenn Wurster, Scott Cosentino. (2021). Apply+ : A tool to intelligently apply security patches.
<https://github.com/ApplyPlus/ApplyPlus>
- Andrea Capiluppi, Nemitari Ajenka, Vikram Subramanian, Meiyappan Nagappan (2021). Knowledge Sharing for Researchers: Extracting, Indexing and Listing Replication Packages from Past Research

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: 2 | **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 multi-threaded 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) - \$2000