

SUPUN ABEYSINGHE

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EDUCATION

Purdue University

Ph.D. in Computer Science - GPA 4.0/4.0

Advisor: Prof. Tiark Rompf

Relevant Courses: Operating Systems, Algorithms, Compilers, Database Systems, Distributed Systems

West Lafayette, IN

Aug 2019 - Present

University of Moratuwa

B.Sc Engineering (Hons) (Computer Science & Engineering)

First Class Honours - GPA 4.06/4.20

Sri Lanka

Oct 2014 - Dec 2018

PROJECTS

1. **Architecting Efficient End-to-end Data Science Pipelines (ongoing work):** Leveraging generative programming techniques to accelerate data processing and machine learning systems and combine them efficiently to build end-to-end data science pipelines (**Scala, C++, CUDA**)
2. **Graph Query Compilation (ongoing work):** Extending relational query compilation techniques based on programmatic specialization and generative programming to support compilation of graph queries realized inside relational query engines, achieving an order of magnitude speedups over interpreted engines (**Scala, C++**)
3. **Server Parameter Auto-tuning using Machine Learning (2019):** Leveraging machine learning based optimization techniques to dynamically auto-tune server parameters to enhance runtime performance (**Java, Python, PyTorch**)
4. **Social Media Analytics Platform (2018):** A platform for automatically extracting information related to a particular entity (e.g., restaurant reviews from multiple sources) and performs various types of analysis (emotion detection, aspect-based sentiment analysis, trending topics and evolution of them, etc.) (**Python, PyTorch**)

EXPERIENCE

Graduate Research Assistant, Purdue University

May 2020 - Present

- Research on using runtime code generation techniques to build efficient data analytics and machine learning systems

Research Engineer, WSO2 Inc. Sri Lanka

Jan 2019 - July 2019

- Research on web server parameter auto-tuning. Done extensive performance tests to identify critical parameters. Experimented with heuristic approaches, Reinforcement Learning (RL), and Bayesian Optimization based approaches

Research Intern, StatNLP Lab, SUTD Singapore

Jun 2017 - Dec 2017

- Research on Natural Language Processing. Involved in testing/implementing of StatNLP framework. Explored graphical models, traditional machine learning models, and deep learning models

SELECTED PUBLICATIONS

1. **Architecting Intermediate Layers for Efficient Composition in End-to-End Data Science Pipelines**
Supun Abeysinghe, Fei Wang, Gregory Essertel, Tiark Rompf
(in submission)
2. **Sentylic at IEST 2018: Gated Recurrent Neural Network and Capsule Network Based Approach for Implicit Emotion Detection**
Prabod Rathnayaka, Supun Abeysinghe, Chamod Samarajeewa, Isura Manchanayake, Malaka Walpola
At Workshop on Computational Approaches to Subjectivity and Sentiment Analysis (held with EMNLP) (2018)

TECHNICAL SKILLS

- **Programmign Languages:** Scala, Java, Python, C, C++
- **Systems and Libraries:** Spark, Flink, PyTorch, Tensorflow, CUDA, LLVM;
Prior Experience - Spring Boot, Angular, Node.js

SELECTED AWARDS

- **Competitive Programming:** IEEEExtreme v12.0 (2018) - Country Rank 1st Global Rank 60th (top 2%), IEEEExtreme v10.0 (2016) - Country Rank 3rd Global Rank 106th (top 5%)