

# SUPUN ABEYSINGHE

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## EDUCATION

### Purdue University

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

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 programmatic specialization and runtime code generation techniques to build efficient end-to-end data science pipelines with up to **20x speedup** over existing approaches (**Scala, C++, CUDA**)
2. **Graph Query Compilation (ongoing work):** Extending relational query compilation techniques based on programmatic specialization to support compilation of graph queries realized inside relational query 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 which automatically extracts 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

## PUBLICATIONS

1. **ADAPT-T: An Adaptive Algorithm for Auto-Tuning Worker Thread Pool Size in Application Servers**  
*Nilushan Costa, Malith Jayasinghe, Ajantha Atukorale, Supun Abeysinghe, Srinath Perera, Isuru Perera*  
At International Symposium on Computers and Communications (ISCC), Barcelona, Spain (2019)
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, Sentiment & Social Media Analysis (WASSA held with EMNLP) (2018)
3. **Enhancing Decision Making Capacity in Tourism Domain Using Social Media Analytics**  
*Supun Abeysinghe, Isura Manchanayake, Chamod Samarajeewa, Prabod Rathnayaka, Malaka J. Walpola, Rashmika Nawaratne, Tharindu Bandaragoda, Daminda Alahakoon*  
International Conference in ICT for Emerging Regions (ICTer) (2018)

## LANGUAGES AND TECHNOLOGIES

- **Languages:** Scala, Java, Python, C, C++
- **Technologies:** Spark, PyTorch, Tensorflow, CUDA, *Prior Experience* - Spring Boot, Angular, Node.js