# ABHIJITH RAMALINGAM

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www.abhijithramalingam.com | Looking for full time roles within Canada, starting July 2018

## WORK EXPERIENCE

### Software Engineering Intern | Amazon (A9.com)

*May 2017 - Aug 2017*

- Worked on the **core infrastructure** of the **Advertising Data Platform**, that stores and processes data from the Amazon Ad Exchange. The team is Amazon's largest data platform and handles **tens of petabytes** of data monthly
- Reduced data storage costs by making changes to **Hadoop** source code that allowed **Hive** queries to be made on encrypted data stored in **AWS S3**.
- Performed benchmark tests with Hive, querying **hundreds of terabytes** of data in order to compare performance tradeoffs at scale between **HDFS** and **S3**.

### Software Development Intern | Capital One Canada

*Sept 2016 - Dec 2016*

- Developed a **secure, highly-available** and **project neutral infrastructure** for releases of Data Science projects using **AWS EC2**, **Docker** and **Terraform**.
- Wrote a **Node.js API** that integrated with internal services and data models, to serve Mobile Beta users with their recurring monthly transactions.

### Distributed Systems Engineering Intern | Wave Inc.

*Jan 2016 - April 2016*

- Developed scalable, fault-tolerant **backend APIs** with **Python** and **Django** for a cloud-based accounting product that has **2.5 million customers**.
- Stored each database change as a sequenced, immutable and queryable event (**Event Sourcing**) for **scalability** and **auditability**.

### R&D Intern | DST Systems

*May 2015 - Aug 2015*

- Added features and bug fixes to a **big data engine** that cleans and prepares large datasets for analytics, using **Hadoop**, **Node.js** and **Ruby on Rails**.
- Developed a **C++** and **Python GUI** that authenticates users with electrocardiogram (ECG) data, streamed in real time via Bluetooth from a wearable device.

## TECHNICAL SKILLS

**Languages:** Python, JavaScript, Java, C/C++

**Data Analysis:** MATLAB, Numpy, Scikit-learn, Pandas, Matplotlib

**AWS:** EC2, S3, Lambda, EMR, IoT

**Tools:** RabbitMQ, Docker, Terraform, Git, Maven

**Front End:** HTML/CSS, jQuery, Bootstrap, React, Redux

**Back End:** Node.js, Socket.io, Express, Django

**Big Data:** Hadoop, Hive, Spark

**Database:** MySQL, PostgreSQL, MongoDB, Redis

## PROJECTS

**Smart Vents :** (Sept 2017 - March 2018) Cloud Lead for an IoT (Internet of Things) system that lets users control individual room temperatures inside their homes using a smart vent system and a smart thermostat. Won a $500 award for "Best IoT Project" at the Mechatronics Engineering Design Symposium. *Tech Used: Python, Node.js, AWS (IoT, EC2, S3), Heroku, MongoDB*

**Autonomous Mobile Robotics Labs:** (Sept 2017 - Nov 2017) Implemented path planning, mapping and localization for a small personal robot (turtlebot) as part of coursework for "Autonomous Mobile Robots". *Tech Used: C++, ROS*

**Personal Finance Chatbot :** (October 2016) Developed a Facebook Messenger chatbot that allows users to keep track of their finances, set savings goals and visualize their spending patterns. *Tech Used: Python, Flask, Node.js, Express, AWS EC2, MongoDB, jQuery*

**Audio Player :** (June 2016) Designed a microcontroller system that plays .wav files from an SD card. Implemented device drivers to read data from a FAT filesystem, and send audio data through an audio CODEC for playback. *Tech Used: C, Altera DE-2 Dev Board*

**Tumor Classifier :** (April 2016 ) Used a variety of machine learning algorithms to build binary classifiers to predict the nature of a tumor based on open data gathered from an online breast cancer dataset. *Tech Used: Python, Numpy, Pandas, Scikit- Learn*

**Bouncing Ball Game :** (Nov 2015) Wrote a game that simulates bouncing balls on an LCD screen of a microcontroller. It was implemented using a multi-threaded architecture, semaphore locks and hardware interrupts to interface with peripherals. *Tech Used: C, ARM-Keil Development Board*

## EDUCATION

### University of Waterloo

*Sept 2013 - April 2018*

- BASc in Mechatronics Engineering, Honours, Co-operative Program. Graduated with distinction.
- **Relevant Coursework:** Algorithms and Data Structures, Real time Operating Systems, Embedded Microprocessor Systems Statistical Analysis, Autonomous Mobile Robots, Pattern Recognition, Design and Analysis of Algorithms

### Online Coursework

- **Machine Learning** | Coursera
- **Computational Investing** | Coursera
- **Exploratory Data Analysis** | Coursera