Abhijith Ramalingam

www.abhijith.info

✉ a2ramali@edu.uwaterloo.ca
⌨ github.com/Abhijith1995
in linkedin.com/in/abramalingam

WORK EXPERIENCE

Software Engingeering Intern | A9.com (An Amazon Subsidiary)
May 2017 - Aug 2017

- Worked on the core infrastructure of the Advertising Data Platform team, 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 on a monthly basis, that is stored across globally distributed Hadoop clusters.
- Changed Hadoop source code to interface with internal Amazon encryption services, enabling tools like Hive, Spark and MapReduce to execute distributed queries on encrypted data stored in S3. This can result in storage cost savings of up to 75% by switching to S3 from HDFS.
- 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 and shipped a Node.js API that interfaced with internal services and data models, to serve Mobile Beta users with their monthly recurring transactions.

Distributed Systems Engineering Intern| Wave Financial Inc.
Jan 2016 - April 2016

- Developed scalable, fault-tolerant backend services 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), to improve concurrency control 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.

Junior Developer & QA | Protecode Inc.
Jan 2014 - April 2014

- Optimized SQL of a data warehousing GUI written in C# and PostgreSQL using SQL joins, reducing data processing time by about 25%.
- Developed web crawlers in C# to download over 120,000 open source projects into a MySQL database from websites like Github and SourceForge.

TECHNICAL SKILLS

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

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

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

Tools: RabbitMQ, Docker, Terraform, Git, Maven

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

Big Data: Hadoop, Hive, Spark

Database: MySQL, PostgreSQL, MongoDB, Redis

AWS: EC2, S3, RDS, Lambda, KMS, CloudWatch, VPC, Route 53

PROJECTS

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 an SD card, 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*

Market Simulator : (Oct 2014 - Nov 2014) Developed a program that accepts trade orders for stocks at past dates to calculate profit using historical data from Yahoo Finance API. *Tech Used: Python, Numpy, Pandas, Matplotlib*

EDUCATION

University of Waterloo
Sept 2013 - Present

- BASc in Mechatronics Engineering, Class of 2018. Currently Enrolled in 4A. Cumalative GPA: 3.5/4
- **Relevant Coursework:** Algorithms and Data Structures, Real time Operating Systems, Embedded Microprocessor Systems and Interfacing Systems and Signals, Numerical Methods, Experimental Design and Statistical Analysis, Control Systems, Autonomous Mobile Robots (ongoing)