Shyam Thiagarajan

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EDUCATION

THE OHIO STATE UNIVERSITY
BS in Computer Science & Engr.
May 2019 | Columbus, OH
Cum. GPA: 3.89 / 4.0
Conc. in Software Engineering
College of Engineering

HONORS
Dean's List (All Semesters)
Full Tuition Scholarship
National AP Scholar
Winner of 2016 OHI/O Hackathon

EXTRACURRICULAR
Society of Hispanic Professional Engineers
Minority in Engineering Program
Collegiate Web Developer's Club
Open Source Club

SKILLS

SOFTWARE SKILLS
Proficient
Java • C • Python • Ruby
JavaScript • Matlab • SQL

Familiar:
C++ • C# • x86 • Shell

THEORY
Machine Learning
Data Mining
Software Components & Design
Object Oriented Programming
Data Structures & Algorithms
Linear Algebra
Discrete Math
Statistics
Technical Writing
Databases
Networking

DEVELOPER TOOLS
Frameworks
Spring • Rails • Flask • NodeJS

Environments
Eclipse • Intellij • PyCharm
Vim • Visual Studio • Jenkins

Markup and Data
HTML • XML • JSON
Markdown • RST • YML

Version Control
Git • Subversion

EXPERIENCE

TEXAS INSTRUMENTS | Software Engineering Intern
May 2019 - Aug 2019 | Houston, TX

- Enhanced the TI Deep Learning Library for concurrent neural network execution across heterogeneous low power devices: DSP, EVE, and ARM CPUs
- Leveraged the Arm Neural Network library (open source) to remedy poor neural network coverage using C++
- Implemented a double-buffered execution pipeline model to allow partitioned sub-network execution on optimal hardware for maximum FPS throughput.
- Increased performance benchmarks by over 250% and provided complete coverage for all Tensorflow, Caffe, Onnx, PyTorch networks

THE OHIO STATE UNIVERSITY | Software Engineer
Oct 2018 – May 2019 | Columbus, OH

- Collaborated on a team effort to produce the next generation of healthcare software
- Used Java Springboot and Hibernate to produce a REST backend API that interacted with a SQLite database
- Implemented Multi-threading capabilities to stream sensor data in real-time
- Used React, NextJS, Javscript, HTML, and CSS to produce web views through JB Browser and Java Swing

CAPITAL ONE | Software Engineering Intern
May 2018 – Aug 2018 | McLean, VA

- Automated the creation and removal of Netflix Zuul Filters in back-end edges for the mobile app
- Developed a Java SpringBoot Application to update microservice routes and interact with Jira tickets
- Created a custom yml parsing library in Java for SpringBoot profiles
- Initiated a sev3 fix for production with a Python config checker using a Jenkins pipeline
- Presented software and a demonstration to entire Edge Team

TEXAS INSTRUMENTS | Software Engineering Intern
May 2017 – Aug 2017 | Houston, TX

- Implemented hardware profiling features in the OpenCL runtime using C, C++ to facilitate multi-core development
- Developed a Python user interface and analysis tool for profiling hardware events such as L1 Cache misses and Stall Cycles
- Integrated Program trace and hardware status monitors into the runtime
- Committed changes a quarter ahead of schedule and picked up future workflow
- Presented software and a demonstration to entire Codegen division

OAK RIDGE NATIONAL LAB | Lead Software Engineering Intern
May 2016 – Aug 2016 | Oak Ridge, TN

- Lead a team effort to visualize the national electric grid status on a US map for 911, FEMA, The National Guard, The White House
- Utilized Python to scrape utility outage maps and aggregated local outage data in PostgreSQL and MySQL databases
- Trained a Naive-Bayes Machine Learning Filter to extract outage relating tweets with 98% accuracy
- Presented work at the Oak Ridge National Lab Poster Session
- Nominated for and published in journal

SOFTWARE PROJECTS

STAR HOUSE LITERACY DEVELOPMENT MOBILE APP | Software Engineer
Jan 2019 – May 2019 | Columbus, OH
- Collaborated with a nonprofit homeless shelter (Star House) to create an iOS/Android mobile app for improving literacy development of the local homeless youth
- Tracked reading analytics such as words read per day and reported aggregated information to mentors and admins through realtime visualizations.
- Rewarded readers with literacy achievement badges based on reading streaks and words per minute improvements.
- Added messaging capabilities between readers and mentors to encourage collaboration
- Created a REST back-end API in NodeJS to communicate with mobile devices
- Used a NoSQL Firebase API to send live push notifications to readers, mentors, and admins
- Used https, bcrypt encryption, and Amazon Web Services to secure account logins and personal information

STOCK TRADING WEB APP | Software Engineer
Aug 2018 – Dec 2018 | Columbus, OH
- Created a gamified stock trading web application using the Flask Web Framework in Python
- Streamed stock prices in realtime through the yahoo finance API
- Created a back-end API in Flask that served dynamic web pages using https
- Added IP Logging features to notify users of account activity via email
- Used https, DUO Mobile 2-factor authentication, Web captchas, inactivity timers, PBKDF2 encryption, and Amazon Web Services to secure account logins and financial information

TWEET TONE ANALYSIS WEB APP | Software Engineer
May 2018 | Richmond, VA
- Collaborated on a team to create a live visualization of tweets based on perceived mood.
- Created a Flask web application to scrape and stream tweets about Capital One into a SQLite database
- Classified collected tweets by tone using IBM Watson's Tone Analysis API
- Used Javascript and Flask to visualize live tweets and plot perceived moods through radar plots

INTERPRETER FOR CORE LANGUAGE | Software Engineer
Aug 2017 – Dec 2017 | Columbus, OH
- Developed a Java interpreter for the Core Programming Language that runs on the Java Virtual Machine
- Created the tokenizer to parse language keywords from a text file
- Implemented a recursive descent parser using a parse tree with left recursion
- Created the executor and printer to evaluate and format Core programs

TEACHING EXPERIENCE

THE OHIO STATE UNIVERSITY | TA for Web Development and Design
May 2017 – May 2019 | Columbus, OH
- Guided upper-division students with full-stack web application design
- Lead sessions to write idiomatic code in Java, Javascript, Ruby, and Rails
- Critiqued software design documentation, technology tutorials, and project proposals

THE OHIO STATE UNIVERSITY | TA for Principles of Networking
May 2017 – May 2019 | Columbus, OH
- Lead Review Sessions of Network architecture concepts (5 layers)
- Mentored students in writing concurrent TCP/UDP Network Applications such as routers and implementing TCP from UDP
- Critiqued networking applications, software design, and technical documentation

THE OHIO STATE UNIVERSITY | TA for Introductory Programming
May 2016 – May 2017 | Columbus, OH
- Mentored engineering students with Java programming fundamentals and algorithmic logic
- Taught design by contract techniques and basic run-time analysis
- Lead programming sessions about class design and clean code principles