Shyam Thiagarajan

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EDUCATION

THE OHIO STATE UNIVERSITY
BS in Computer Science & Engr.
May 2019 | Columbus, OH
GPA: 3.9 / 4.0
Software Engineering Concentration
College of Engineering

SKILLS

ACHIEVEMENTS
AWS Solutions Architect Certified
Employee of the Month
Society of Hispanic Prof. Engineers
Full Tuition Scholarship
National AP Scholar
Winner of 2016 OHI/O Hackathon

SPECIALTIES
AWS Cloud Architecting
Backend Web Developement
REST API Design
Continuous Integration & Deployment
Testing: unit, integration, system
Database Architecture
Networking
Data Structures & Algorithms
Technical Writing
Presentations

LANGUAGES
Proficient
Java • C • Python • Ruby
JavaScript • Matlab • SQL

Familiar:
C++ • C# • x86 • Shell

DEVELOPER TOOLS
Frameworks
Spring • Rails • Flask
NodeJS • Hibernate • Django
Drools • Cucumber • Karate

Tools
Jenkins • Mockito • Postman

Data
HTML • XML • JSON
RST • Markdown • YML
Parquet • Avro • CSV

Version Control
Git • Subversion

EXPERIENCE

CAPITAL ONE | Software Engineer
Aug 2019 - Present | Chicago, IL
- Leveraged Java Springboot to create a high TPS Credit Card Decisioning Platform in the AWS Cloud for optimal resiliency and user experience
- Migrated a mainframe disclosure generation process to a serverless AWS architecture for cost efficiency and resiliency
- Innovated a release validation pipeline using Python & Jenkins

TEXAS INSTRUMENTS | Software Engineer 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 C++ & Arm Neural Network library (open source) to expand compatibility to Tensorflow, Caffe, Onnx, and PyTorch networks
- Implemented a double-buffered execution pipeline to allow partitioned sub-network execution, resulting in a 250% performance improvement

OHIO STATE SPINE RESEARCH INSTITUTE | Software Engineer
Oct 2018 – May 2019 | Columbus, OH
- Used Java Springboot & Hibernate to produce healthcare software
- Implemented multi-threading capabilities for real-time sensor streaming
- Used React & NextJS to produce web GUIs in JB Browser & Java Swing

CAPITAL ONE | Software Engineer Intern
May 2018 – Aug 2018 | McLean, VA
- Leveraged Java SpringBoot & javascript to create a web app for modifying microservice routes and Netflix Zuul filters for the mobile app back-end
- Created a custom yml parsing library in Java for SpringBoot profiles
- Solved production sev3 with a Python config checker using a Jenkins pipeline

TEXAS INSTRUMENTS | Software Engineer Intern
May 2017 – Aug 2017 | Houston, TX
- Used C & C++ to add hardware profiling features to the OpenCL runtime
- Developed a Python UI for profiling and visualizing hardware events such as L1 Cache misses and Stall Cycles during OpenCL Kernel Executions
- Integrated Program trace and hardware status monitors into the runtime

OAK RIDGE NATIONAL LAB | Lead Software Engineer 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 into PostgreSQL & MySQL databases
- Trained a Naive-Bayes Machine Learning Filter to extract outage relating tweets with 98% accuracy

OAK RIDGE NATIONAL LAB | Software Engineer Intern
May 2015 – Aug 2015 | Oak Ridge, TN
- Modeled and simulated patient adherence to the Hepatitis-C Cascade of Care
- Leveraged Repast Suite and Java to create agent based simulations
- Added health care insurance elements and inter-patient influence dynamics

SOFTWARE PROJECTS

STAR HOUSE LITERACY DEVELOPMENT MOBILE APP | Software Engineer
Jan 2019 – May 2019 | Columbus, OH
- Volunteered at 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 (ie: words read per day) and reported aggregated statistics to mentors 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 running on the Java Virtual Machine
- Created a tokenizer to parse language keywords from a source file
- Implemented a recursive descent parser using a parse tree with left recursion
- Created an 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-level 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