

# Shyam Thiagarajan

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## EDUCATION

### THE OHIO STATE UNIVERSITY

#### BS IN COMPUTER SCIENCE & ENGR.

May 2019 | Columbus, OH

Cum. GPA: 3.88 / 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

### 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, Javascript, 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

### OAK RIDGE NATIONAL LAB | SOFTWARE ENGINEERING INTERN

May 2015 – Aug 2015 | Oak Ridge, TN

- Collaborated on a team effort to model and simulate the Hepatitis-C Cascade of Care
- Utilized Repast Suite and Java to create an agent based simulation
- Developed health care insurance scenarios and Co-developed patient networking elements
- Presented work at Oak Ridge National Lab Poster Session
- Nominated for and Published in National Conferences on Undergraduate Research 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