

WORK EXPERIENCE

Software Development Engineer **Amazon** **Sep 2021 – Present**

- Saved millions of dollars in infrastructure by calculating and scaling fleet efficiently to handle 1M transactions per second ,Took complete ownership of a Tier1 service develop, maintain, test & deploy.
- Performed Chaos Testing, Contingency review etc. to high availability services to ensure high resiliency.
- Migrated a service to high performance search platform, this improved its latency by 50%.

Software Engineer Intern + FTE **AppDynamics (Cisco)** **Feb 2021 – Sep 2021**

- Single point of Contact and Lead Developer on an internal project – Angular, Spring Boot, mongo. Integrated Okta SSO, wrote cron jobs for routine jobs and core backend features.
- Wrote lightweight hassle-free DUM and integrated with controller and Thousand eyes – python, Elasticsearch.
- Wrote Docker client that is used by many teams to generate multi nodal containers. Deployment of microservices using terraform, ansible and created release pipeline in Teamcity.

Contract Software Developer **Qt** **Sep 2019 – Sep 2020**

- Ported most parts of Platform Integration Layer like Process spawning, Network Fetching threads, Bitmap drawing using Qt APIs. Ported Webkit tests to benchmark and diagnose QtWebkit.
- Configured GitHub actions for building QtWebkit across multiple platforms and Travis for QA Testing (YAML). Wrote python scripts for downloading qt binaries for CI and automated build process.

Student Developer **Google Summer of Code 2019** **Apr 2019 – Nov 2019**

- Implemented Download to Folder options in Web positive (A Browser written in C++ for Haiku).
- Ported Webkit to Haiku. Worked with two large and complex code bases, making major changes to Haiku-Webkit library by implementing required components.
- Replaced the multi-thread network model with a single thread per request within Haiku’s Network Manager.

Research Intern **IIIT Design and Manufacturing** **May 2018 – June 2018**

Implemented Transfer Learning with COCO Model, alongside edge detection algorithms to detect stains present on fabric using OpenCV and TensorFlow. Optimized model efficient enough to run on RPi.

TECHNICAL EXPERIENCE

Open Source

- **Apple - Swift:** Wrote features under flag parsing, diagnostics message emission for swift **compiler** and swift standalone **driver**. Fixed bugs with Swift - CXX Interop. **Swift, C++** - Used by iOS dev’s across globe.
- **PlasmaPy:** Created Interactive notebook used by many plasma physicists to calculate various plasma properties. Addition of generalized Temperatures to various speed parameters. **Python**
- **Apple - Webkit:** Maintainer of Webkit ports – **QtWebkit** and **Haiku Webkit** (review PR’s and primary contributor). Wrote platform Integration Layer between Webkit and underlying platforms, PCH to speed up compile times. **C++, Qt** – Used by 24% car entertainment across globe.
- **Engnr:** Rewrote the qt downloader script to extend its capabilities. **Python, Bash**
- **GeoPuzzle:** Fixed Typo, and few build issues. **Python, Django**
- **LIBRE HEALTH EHR:** Added Dropdown feature and some code refactoring. **PHP**

Personal Projects

- **DConsole:** Concurrent logging tool written with Golang, react and electron. With interfaces for languages like C++, python, etc. Passes data via websockets and/or http. **Go, react, C++, python**
- **Chip8 Emulator:** Chip8 Emulator written using Rust (wasm) and js frontend to produce high performance emulation experience. **wasm, rust, js**
- **Attention Span Detector:** An app to monitor user’s attention during a course using Pose Net. **JavaScript, Json, P5.js, Tensorflow.js, Geometry.**
- **Digit Recognizer:** GUI app that allows to draw and predict using CNN. **Python, Kivy, TensorFlow**
- **Physics Engine:** Simple Force Simulator on standard objects. **OpenGL, CUDA**
- **JS-OS:** The Operating system on the web that offers the same UI across all platforms, able to resume from a frozen state. **Web Sockets, Node.js, MongoDB, React**

- **Personal Assistant-Friday:** Perform automation tasks based on speech, analyze feelings based on context and offer Advice. **Python, TensorFlow**
- **Q&A Site:** A Node powered web site to ask and answer. **Django, MongoDB**
- **Predictive Keyboard:** Predictive Keyboard using Suffix Tree and Bayesian Network, done using Marshaling. **C++, C#, WPF**

EDUCATION

Chennai, India **Vellore Institute of Technology** **May 2017 – May 2021**

- B.Tech. in Computer Science. **GPA: 9.5/10.0** (3.76/4).
- Undergraduate Coursework: Operating Systems; Databases; Algorithms; Programming Languages; Comp. Architecture; Calculus; Artificial Intelligence; Machine Learning; Object-Oriented Software Development;

ACHIEVEMENTS

- Received 3 **Cisco connected recognition** from managers, colleague's for exceptional work done.
- Finalist in **Internal Hackathon** conducted by AppDynamics (2021).
- Completed **Google Summer of Code 2019** with Haiku, Inc. Selected out of 12k students globally.
- Completed **HacktoberFest 2019**. Made 5 contributions to an open-source project within 2 days.
- Paper Presentation on Suffix Trie in an **International Conference (2019)** held in VIT.
- Runner up in **2x10 Relay Coding Contest (2019)** out of 100 participants.
- Winner **International Language Day Hackathon (2017)**. Made a game to teach German within 24 hours.
- 10th place out of 150 participants in Top Coder Open 17 held in Bangalore. (2017)
- Secured 7th Rank among ~2000 students in VIT, in 1st year. (2017)
- Cleared **Zonal Computing Olympiad** and advanced to INOI. (2015)
- AISSCE grade 12 - **First rank student** in 4 electives in Science Group; Subject topper in chemistry; Second best project in Computer Science; Highest aggregate English, Math and Computer Science. (2015)

TECHNOLOGIES

- **Programming Languages:** C++ (Proficient), C (Intermediate), Python (Intermediate), SQL(Intermediate), JavaScript (Intermediate), PHP (Intermediate), Java (Intermediate), Bash (Basic), C# (Basic), Rust(Basic), Golang (Basic)
- **Frameworks:** MERN Stack (MongoDB, Express.js, React.js, Node), Meteor.js, Bootstrap, Less, Factory Boy, React Native, Selenium, Qt5, Electron
- **DevOps:** Git, Kibana, Elastic Search, Travis CI
- **Advanced Programming:** C++/C# CLI, CUDA, CMAKE, ASM, WASM (Basic Exposure – can quickly learn to work)
- **Libraries:** Tensorflow, Keras, Boost, OpenCV, NLTK, OpenMP, MPI (Basic Exposure – can quickly learn to work)

MENTORSHIP EXPERIENCES

Student Mentor **Google Summer of Code 2020** **Apr 2020 - Present**

Input Preferences

- Mentoring a student project that aims at creating settings configuration for various hardware devices.

Event Coordinator **Spoken Tutorial, IIT Bombay** **Apr 2020 – May 2020**

- Mentored professors from all over India and helped them learn various programming languages like (Ruby, Java, Python and C++) alongside setting problems to test their learnings from the course.

Student Mentor **Google Code In 2019** **Dec 2019 – Jan 2020**

- Mentored High School students to complete various tasks ranging from easy to hard with Haiku and choose the best contributor for the grand prize sponsored by Google.

Student Mentor **NJACK, IIT Patna** **Sep 2019 – Jan 2020**

MISCELLANEOUS

- Portfolio – <https://bit.ly/graju>
- Interactive Portfolio (OS Themed) - <https://rajagopalan-gangadharan.github.io/Portfolio/>