Ajay Arumugam

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TECHNICAL SKILLS

Languages: Python, C, C++, Java, JavaScript, TypeScript, SQL, Golang, Groovy, Bash
Frameworks: React, Node.js, Express, Mongoose, Spring Boot, JUnit, Mockito, Flask, Angular, ESP-IDF
Libraries: Pandas, NumPy, Matplotlib, FreeRTOS, Socket.io
Tools: Git, AWS, GCP, Docker, Kubernetes, Kafka, Linux, MongoDB, Jenkins, Hashicorp Vault, Artifactory, GitLab

EXPERIENCE

Qualcomm   May 2023 – Aug 2023
Software Engineering Intern   *Markham, ON*
- Incoming Software Engineering Intern on the Machine Learning Tools and Optimization Team.

IBM   May 2022 – Aug 2022
Software Developer Intern   *Ottawa, ON*
- Identified root causes and developed fixes for **8** bugs in our **REST API** service using **Java** and **PostgreSQL**.
- Developed a **Groovy Script** to deploy **Kubernetes Operators** and Microservices into test environment resulting in a **30%** increase in functional test coverage.
- Utilized **Docker, Kubernetes API** and **Groovy** to automate deployment of dev environment for debugging our project, leading to a **70%** boost in developer productivity.

Hydrotek Farm   Sep 2020 – Oct 2021
Full Stack Web Developer Intern   *Remote*
- Spearheaded development of IoT mobile app using **Ionic** and **Angular**, enabling remote monitoring and control of IoT hardware in urban farms, improving farming efficiency and scalability.
- Engineered **RESTful microservices** using **NodeJs, ExpressJs, MongooseJS, Docker** and **Kubernetes** to manage over **20 GB** of historical sensor data and customer data from **MongoDB**.
- Reduced deployment time by **90%** by constructing **CI/CD Pipelines** in **Jenkins** to containerize microservices using **Docker** and deploy to **AWS EKS**.

Hydrotek Farm   Feb 2020 – Aug 2020
Embedded Software Developer Intern   *Kansas City, KS*
- Led a team of **3** engineers to build IoT Fertigation system using **C, C++, ESP 32, FreeRTOS** and **AWS IoT Core** that broadcasts and controls pH, nutrient levels, temperature, humidity of hydroponic farming systems.
- Delivered MVP to stakeholders in **12 weeks** and supervised the factory mass production process.
- Designed Sensor Polling Architecture that retrieves sensor data through **I2C** and **One Wire Bus** protocols and relays it to **AWS IoT Core** every **15** seconds to be processed by our AI Disease Detection Algorithm for gathering insights about the customer's crops.

PROJECTS

UpSkill - Calgary Hacks (2nd Place - $3000)   Feb 2023
- Built a **React** app that allows students to teach and share hobbies with other students on campus.
- Implemented REST API endpoints using **Node, Express** and **AWS Lambda** to make our app highly scalable
- Utilized **Natural Language Processing** to censor inappropriate language in the chat feature.

Duo Chef - Hack Your Learning (1st Place - $600)   Feb 2022
- Developed gamified **React** app to learn cooking with curated recipes, daily streaks, social feed, and leaderboard.
- Created microservice that utilizes **Computer Vision** to award points based on pictures of completed recipes.

Private Tutoring Business   March 2022
- Launched private tutoring business and taught over **30** high school and university students from schools like University of Waterloo, University of Toronto, Queens University, University of Illinois, etc
- Taught coursework in C, C++, Java, Python, Web Dev, NumPy, Pandas, Data Structures and Algorithms.
- Generated over **$20,000** in revenue since 2022.

EDUCATION

University of Calgary   Aug 2020 – April 2024
Software Engineering, Minor in Entrepreneurship GPA: 3.61/4.0   *Calgary, AB*