

# Ikhyun `John` An

Atlanta, GA

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## Education

### Georgia Institute of Technology

Bachelor of Science, Computer Science

▪ GPA 3.77 / 4.00

Atlanta, GA

Aug 2019 – Dec 2024

## Experience

### Samsung Semiconductors

Software Engineer Intern

Seoul, Korea

Jun 2023 – Aug 2023

- Implemented an inter-server anomaly detection tool for AI-based analytics and data visualization platform Spotfire utilized by 60,000 employees to identify uncaught points of failure and optimize horizontal scaling measures for increased system reliability.
- Constructed data pipeline using **Logstash** and **Beats** and indexed using **Elasticsearch** clusters and Kibana, reducing query time to 50ms, which enabled real-time anomaly detection.
- Developed a **Java** Spring Boot gateway application using **Maven** for unit testing and load balancing.

### Federated Orchestration for Edge Computing

Undergraduate Research Assistant

Atlanta, GA

May 2023 – Dec 2023

- Deployed Faasd functions on **Docker** and **Kubernetes** to diagnose and evaluate end-to-end latency times of edge-site function calls.
- Integrated **MinIO** and **AWS Lambda** into data infrastructure and provided faster data storage and retrieval for simulated edge computing.
- Modeled C++ drone navigation computation offloading across multiple edge sites using ROS2, OpenCV library, and FAST and built intermediary C++ Network Application for transfer of sensor data.
- Tracked bottleneck of function deployment in Faasd and rewrote the **Go** application to streamline timestamps.

### Cassie Foot & Human Prediction

Undergraduate Research Assistant

Atlanta, GA

Jan 2023 – Dec 2023

- Used **Pytorch** and **Tensorflow** to create a path planner that mimics how humans navigate through obstacles.
- Enhanced the Digit Controller C++ application, resulting in an increase in Cassie's sustainable time to 12 seconds.

## Project

### Virtual Memory Optimization in xv6

Academic Project

Atlanta, GA

Jan 2024 – Feb 2024

- Implemented copy-on-write forking in the xv6 virtual memory system in **C**, delaying page copying during process forking to enhance efficiency.
- Introduced lazy zero initialization for data pages, minimizing memory duplication and improving overall kernel efficiency.

### Python Server Project

Academic Project

Atlanta, GA

Sep 2023 – Dec 2023

- Developed a **Python** server program with the capability to run on a specified port, configured through command-line parameters, facilitating efficient communication in a networked environment.
- Implemented a secure client program enabling users to join the server, incorporating a user-friendly authentication system with display name and passcode requirements, ensuring a streamlined and controlled access to the chat room.

### Cloud Platform Personal Project

Personal Project

Atlanta, GA

Aug 2023 – Nov 2023

- Orchestrated the deployment of an autoscaling backend service developed with **Flask**, leveraging the power of **Kubernetes** cluster and **OpenFaaS** to ensure seamless scalability within the Cloud Platform Personal Project.
- Implemented and managed CockroachDB instances by containerizing them as **Docker** containers on a Kubernetes cluster (k3s), enhancing the project's database infrastructure for optimal performance and reliability.
- Conducted comprehensive analysis on the latency times of Faasd functions by executing **REST API** calls through HTTP requests, contributing valuable insights into the performance dynamics of the Cloud Platform Personal Project.

### Campus Discovery Application Group Project

Course Project – Objects and Design

Atlanta, GA

Aug 2022 – Dec 2022

- Collaboratively developed and launched a dynamic web application within a team of 5, utilizing **Typescript** and **React**, to seamlessly create and edit school events on campus as part of the Campus Discovery Application.
- Established a robust database infrastructure by implementing Google's **Firebase**, ensuring efficient and real-time data management for the Campus Discovery Application.

## Skills

Programming Languages

Tools & Frameworks

Python, Java, C++, C, C#, Go, TypeScript, JavaScript, html, CSS, MySQL, NoSQL, PostgreSQL

Spring, Node.js, Next.js, Flask, React, Firebase, AWS Lambda, MinIO, MongoDB, CockroachDB, Wireshark,

Pytorch, Tensorflow, Docker, Podman, Kubernetes, Prometheus, Elastic Search, Logstash, Kibana, OpenFaaS

## Leadership Experience

### Korean American Scientist and Engineers Association

Vice President, Secretary

Atlanta, GA

Aug 2019 – Present

- Liaised with the National Board Funding Committee to secure substantial financial support for organizing and executing events.
- Monitored and assessed event proposals, ensuring alignment with organizational goals and budgets.

### Republic of Korea Army

Sergeant, Squad Leader

Republic of Korea

Aug 2020 – Dec 2021

- Supervised team of 25 draftees in the army band for military parades and performances.