SEUNGHAN, LEE

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EDUCATION

Northeastern University   **Expected: May 2025**
Master of Science, Computer Science   Boston, MA, USA
- Coursework: Data Structure, Algorithm, Object Oriented Programming, Database, Operating System, Network
- Activities: **Teaching Assistant** (Discrete and Data Structure)

Yonsei University   **Graduated: February 2020**
Bachelor of Science, Economics   Seoul, South Korea
- Activities: International Student Support Group(Vice President), Mentor's Club (Leadership), Tutor (Mathematics)

PROFESSIONAL EXPERIENCE

Software Engineer Intern   **May 2023 – August 2023**
NU WiNS Lab   Boston, MA
- **Achieved** significant improvement in **bandwidth** by **90%** and **latency** by **50%** for the **live video streaming** application.
- Developed **Python Script** to automate capturing of **1M+ UDP** packets and visualizing network performance using **Tcpdump**, reducing manual effort by **95%** and accelerating efficiency in network monitoring.
- Spearheaded **web application** development of both the **backend** and **frontend**, integrating with **C#** Android Application.
- Leveraged **Firebase** as hosting and Firestore database that works as a signaling server for SDP and ICE candidate negotiation.
- Refactored extensively video capturing program written with Video For **Linux** 2 library in **C++.**

Software Engineer   **August 2023 – Present**
BCharity   Remote, USA
- Contribute to the **Open Source** website built with **TypeScript**, **React.js** as front-end and **GraphQL** as **back-end**.
- Elevated user experience by integrating **React.js, Next.js** Components for new features following **object-oriented design**.
- Promoted **agile development** with team members for new features and **bug fixes** using **Jira** and **version control**.

Computer Science Instructor   **July 2023 – Present**
Microsoft   Boston, MA
- Taught **Java** Language to **30+** underrepresented high school students, improving their access to computer science education.
- **Collaborated** with teachers to develop homework, automated **tests**, and provided support in addressing questions.
- Successfully articulate intricate concepts in a simplified manner, resulting in 100% participation rate for the class.

Machine Learning Engineer   **July 2022 – August 2022**
Institute of Agricultural Technology   Seoul, South Korea
- **Headed a team** of 3 students to participate in the **AI Hackathon** hosted by Institute of Agricultural Technology.
- Implemented **Random Forest**, **Support Vector Regression**, **XGBoost** and **LSTM Model** to predict the growth of tomato plant.
- Achieved **top 10%** out of 300 teams, by continuously improving the model accuracy throughout the project.

PROJECTS

Generative Dungeon Game | Backend Development, Java, AWS, OOP, Algorithm   **February 2023 – May 2023**
Java Game with interactive GUI and efficient Backend Design
- Developed **backend system** for a randomly generated 8-bit dungeon crawling game using **OOD** and **MVC** design pattern in **Java**. Deployed the program to an **AWS** EC2 instance.
- Implemented **Graph algorithms** to randomly generate rooms connected with hallways in the Minimum Spanning Tree and to move enemies in Shortest Path to the player.

Multi-Container Docker Application / **DevOps, Docker, Kubernetes, CI/CD, Postgres, Redis, GCP**   **May 2023 – July 2023**
Calculator web application that supports CI/CD using Travis CI, Docker, and Kubernetes
- Developed a calculator web app using **React**, **Postgres** as the relational database, Nginx as the reverse proxy server.
- Implemented multi-container **Docker** files to containerize and manage the applications components effectively.
- Established **CI/CD pipeline** using Travis CI, **Docker** and **Kubernetes**, enabling automated building, testing and deployment.
- Utilized Google Kubernetes Engine for the deployment of the application on the **Google Cloud Platform**.

SKILLS & ACHIEVEMENTS

Programming Languages – Java, Python, C++, C, C#, TypeScript, JavaScript, HTML5, CSS, SQL
Tools & Frameworks – Git, Linux, Node.js, Next.js, React.js, Django, Spring Boot, Android Studio, Unity, Wireshark, TensorFlow
Cloud & Databases – AWS, Google Cloud, Firebase, Docker, Kubernetes, MongoDB, MySQL, PostgreSQL, Redis, GraphQL