

SEUNG-HAN, LEE

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EDUCATION

Northeastern University

Expected: May 2025

Master of Science, Computer Science

Boston, MA, USA

- Activities: **Microsoft TEALS (Java Teacher, Boston Latin Academy)**, **Teaching Assistant** (Discrete Structures) GPA: 4.0/4.0
- Coursework: Data Structure, Algorithm, Object Oriented Programming, Database, Operating System, Network

Yonsei University

Graduated: February 2020

Bachelor of Science, Economics

Seoul, South Korea

- Activities: Agricultural **AI Hackathon** (Team Leader), Private Tutor (Calculus/Probability)

GPA: 92.1/100

PROFESSIONAL EXPERIENCE

Northeastern University Networks Lab | WebRTC, Python, C++, Firebase, Network, Robotics, XR

May 2023 – August 2023

Software Engineer Intern

Boston, MA

- Improved the **video streaming** application **bandwidth** by **90%** and **latency** by **50%** used by **Telepresence Robot**.
- Used **Firebase** as hosting and **Firestore** database that works as a signaling server for SDP and ICE candidate negotiation.
- Built both a browser based **WebRTC** application and **Unity Android Application** to integrate with Meta Quest Pro **VR** headset.
- Implemented **Python** scripts to capture **UDP** packets to measure network performances using **Tcpdump**.
- Refactored video capturing program written with **V4L2(Video For Linux 2)** library in **C++**.

BCharity | Full-Stack Development, Open Source, TypeScript, Next.js, Figma, Vercel, Jira

August 2023 – Present

Software Engineer

Remote, USA

- Contribute to an **Open-Source** project aimed at developing a decentralized volunteer hour ledger system.
- Improved user experience by seamlessly integrating **Next.js** Components for new features and optimizing web page layouts.
- Promoted **agile collaboration** with team members for new **feature releases** and **bug fixes** using **Jira**.

KPMG Accounting Corp. | Python, Automation

September 2020 – December 2022

International Tax Associate

Seoul, South Korea

- Increased efficiency** by **80%** through implementing **Python** script to **automate** file categorization for pdf files.
- Led a team to develop tax computation templates for the newly stipulated cross-border e-commerce taxation.
- Efficiently communicated financial risk exposures to its stakeholders during buy-side M&A Due Diligence.

PROJECTS

Campground Review Website | Node.js, HTML, CSS, JavaScript, MongoDB

April 2023 – June 2023

Full-Stack website that allows users to search, browse, comment and rate campsites with user authentication

[Link](#)

- Built dynamically rendered front-end webpages using **HTML/CSS/JavaScript**, **EJS** and **Bootstrap**, and deployed it to **Heroku**.
- Implemented **RESTful APIs** servers that handles HTTP requests using **Node.js**, **Express.js** with **ES6 Design Pattern**.
- Created non-relational database using **MongoDB** that stores campsite information, comments and images stored in **Cloudinary**.
- Utilized **Mapbox API** to render dynamic cluster map of campsites from user created database.

Generative Dungeon Game | Java, AWS, Backend Development, OOP, MVC, Graph Algorithm

February 2023 – May 2023

Java Game with interactive GUI and efficient Backend Design

[Link](#)

- Developed **backend system** for a randomly generated 8-bit dungeon crawling game using **Object-Oriented Programming** and **MVC** design pattern in **Java**. Deployed the program to an **AWS EC2** instance.
- Implemented **Graph algorithms** (i.e. **Kruskal's Algorithm** and **Shortest Path Algorithm**) 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 / Docker, Kubernetes, React, CI/CD, Postgres, Redis, Nginx

May 2023 – July 2023

Calculator web application that supports CI/CD using Travis CI, Docker, and Kubernetes

[Link](#)

- Developed a calculator web app using **React**, **Postgres** as the database, **Nginx** as the reverse proxy server, and **Redis** for caching.
- 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, Assembly, HTML/CSS, SQL, R

Tools & Frameworks – Git, Node.js, Next.js, React.js, Svelte, Django, Spring Boot, Bootstrap, Unity, Linux, Wireshark, TensorFlow

Cloud & Databases – AWS, Firebase, Docker, Kubernetes, Heroku, MongoDB, MySQL, PostgreSQL, Hibernate, Redis

National Top 150 out of 600,000 test takers for Korean SAT (**Top 0.02%**)