` SEUNG-HAN, LEE

Boston, MA / (857) 397-8944 / seunghan.lee.job@gmail.com / GitHub | LinkedIn

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

Yonsei University	**Graduated: February 2020**
Bachelor of Science, Economics	Seoul, South Korea

- Activities: Private Tutor (Calculus/Probability), Math Tutor (Salvation Army Rehab Center, San Diego)   GPA: 92.1/100

SKILLS & ACHIEVEMENTS

Programming Languages – Java, Python, C++, C, C#, TypeScript, JavaScript, Assembly, HTML/CSS, SQL, R
Tools & Frameworks – Git, Node.js, Angular, React, Flask, Spring Boot, Bootstrap, Linux, Wireshark, TensorFlow, Pandas
Cloud & Databases – AWS, Firebase, Docker, Kubernetes, Heroku, MongoDB, Django, MySQL, PostgreSQL, Hibernate, Redis
National Top 150 out of 600,000 test takers for Korean SAT (**Top 0.02%**)

PROFESSIONAL EXPERIENCE

**Northeastern University Networks Lab	WebRTC, Network, Robotics, XR, C++, Firebase**	**May 2023 – August 2023**
Software Engineer Intern	Boston, MA

- Developed a low latency and low bandwidth **video streaming** application using **WebRTC** API for **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++.**
- Optimized the bandwidth from **100Mbps to 5Mbps** and latency from **300ms to 150ms** by replacing **NDI** implementation.

**KPMG Accounting Corp.	Python, Automation**	**September 2020 – December 2022**
International Tax Associate	Seoul, South Korea

- Implemented **Python** script to **automate** file categorization for pdf files using OS Module, increasing efficiency by **80%**.
- 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 **EJS**, **HTML/CSS/JavaScript** 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**.

AI Hackathon: Tomato plant growth prediction / **Python, Keras, Machine Learning**	**July 2022 – August 2022**
Time-series analysis using Machine Learning and Deep Learning Algorithms	

- **Led a team** of 3 students to participate in the **AI Hackathon** hosted by Office of Agricultural Technology in South Korea.
- Implemented **Logistic Regression**, **Random Forest**, **Gradient Boost** and **Keras LSTM Model** to predict the growth of a tomato plant (i.e. growth of height, number of flowers bloomed) given the seven days of data. Achieved **top 20%** out of 300 participants.