

SEUNG-HAN, LEE

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EDUCATION

Northeastern University

Master of Science, Computer Science

- Coursework: Data Structure | Algorithm | OOP | Database | Operating System | Network

Expected: May 2025

Boston, MA, USA

GPA: 4.0/4.0

Yonsei University

Bachelor of Science, Economics

- Activities: Agricultural **AI Hackathon** (Team Leader), Mentor Club (Leadership)

Graduated: February 2020

Seoul, South Korea

GPA: 92.1/100

PROFESSIONAL EXPERIENCE

Software Engineer | Full-Stack Development, Open Source, TypeScript, React.js, Next.js, Figma, Jira

August 2023 – Present

BCharity

Remote, USA

- Contribute to an **Open-Source** project aimed at developing a decentralized volunteer hour ledger system.
- Elevated user experience by skillfully 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**.

Software Engineer Intern | Python, C++, Linux, JavaScript, Network, Robotics

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.
- Successfully architecture both the **backend** and **frontend**, seamlessly integrating with C# Unity Android Application.
- Leveraged **Firebase** as hosting and Firestore database that works as a signaling server for SDP and ICE candidate negotiation.
- Developed **Python** scripts to capture **UDP** packets to measure network performances using **Tcpdump**.
- Refactored extensively video capturing program written with V4L2(Video For **Linux** 2) library in **C++**.

Computer Science Instructor | Java, Teaching

July 2023 – Present

Microsoft TEALS

Boston, MA

- Taught **Java** Language to 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.

Graduate Teaching Assistant | CS 5002: Discrete and Data Structures

August 2023 – Present

Khoury College of Computer Science, Northeastern University

Boston, MA

- Led** weekly Office Hour for **100+** students to address questions and review the course materials.
- Successfully communicated intricate concepts in a simplified manner, resulting in **100% participation rate** for the Office Hour.

PROJECTS

Campground Review Website | Full-stack Development, JavaScript, Node.js, 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.

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

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 / 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

[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