

# Jennie Jinhee Bae

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## EDUCATION

**University of Southern California**, Los Angeles, CA Aug 2022-May 2024  
Master of Science, Computer Science (GPA: 3.77/4.0)

**Gachon University**, Gyeonggi-do, South Korea  
Master of Engineering, Computer Engineering (GPA: 4.5/4.5) Sep 2020-Feb 2022  
Bachelor of Engineering, Computer Engineering (GPA: 3.95/4.5, cum Laude) Mar 2017-Feb 2021

## WORK EXPERIENCE

(Upcoming) Software Engineer Intern Mar 2025-June 2025  
**National Renewable Energy Laboratory (NREL)**, Golden, CO

Algorithm Developer July 2024-Feb 2025  
**USC Information Sciences Institute**, Marina Del Rey, CA (Remote)

- Enhanced system efficiency, cutting software sweep time by **11%** with optimized signal processing algorithms in **Python**
- Designed and fine-tuned **CNN** model enabling detection of **20+** signal types and achieving up to accuracy of **0.97** by noise level
- Used **C** and **Matlab** to estimate signal arrival direction by computing covariance matrix and performing spatial spectrum analysis

Software Engineer Intern Jun 2023-Aug 2023  
**Age of Learning**, Glendale, CA

- Deployed **APIs** for authentication to streamline customer access by integrating third-party APIs using **PHP** and **AWS SDK**
- Achieved **10%** reduction in response time by utilizing **Datadog** and **Artillery** for scalability and traffic monitoring version control
- Engaged in unit tests and integration tests for multiple features, including data encryption on distributed system clusters in agile
- Developed a chatbot service with **LLMs** to improve safeguards by leveraging the **ChatGPT API** and stored to **SQL** database

Software Engineer Jan 2022-Jun 2022  
**K2soft**, South Korea

- Designed **API** gateway features to cache frequently requested data from smart farm IoT sensors with **Flask** and **AWS**, while intelligently routing requests to targeted processing components using **Python**, resulting in **30%** reduction in response latency
- Built a real-time dashboard to visualize IoT data systems for engineers in **Typescript** frontend, boosting working efficiency
- Created a STT translation that supports **103** languages by integrating Google API, processing over **300** hours of audio data

Research Assistant Mar 2019-Feb 2022  
**Artificial Intelligence Lab**, South Korea

- Released an **android application** predicting **5** depression levels using **machine learning** model for wireless ECG machine data
- Refined a **machine learning** model with feature selection and clustering techniques, achieving **94%** classification accuracy
- Fine-tuned a **CNN** model using statistical features to analyze heartbeats, reaching 97% accuracy in a real-world medical setting

## PROJECTS

Noticeboard Server

- Built a **RESTful** noticeboard server with **Spring Boot**, providing user roles for post and comment management of club members
- Secured authentication with **JWT** and **Spring Security**, implementing CRUD operations with JPA for database interaction
- Coordinated input validation, exception handling, and real-time updates, ensuring data integrity and seamless team collaboration

Event Search Web Application

- Developed an event search web app that combined **4** external services into one-stop dashboard for searching events and details
- Constructed the service to **iOS app** with auto complete, location detection, SNS, favorite features to enhance functionality
- Reduced code by **40%** by refactoring and optimizing features with **Node.js** for backend server and **Bootstrap** for frontend UI

## TECHNICAL SKILLS

Languages: Python, Java, C/C++, PHP, MySQL, JavaScript, HTML, CSS, TypeScript, SwiftUI, Matlab  
Tools: Git, Docker, Artillery, Datadog, AWS SDK, GCP, AWS, Arduino  
Frameworks: Spring boot, Angular, Bootstrap, Node.js, Apache Tomcat, Keras, Tensorflow, Numpy, Pandas, Langchain