

# Jennie Jinhee Bae

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## EDUCATION

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University of Southern California, Los Angeles, CA

Aug 2022-Present

Master of Science in Computer Science (current **GPA**: 3.8/4.0)

- **Coursework Highlights:** *Web technologies, Database systems, Analysis of Algorithms, Multimedia Systems Design*

Gachon University, Gyeonggi-do, South Korea

Master of Engineering in Computer Engineering (**GPA**: 4.0/4.0)

Sep 2020-Feb 2022

Bachelor of Engineering in Computer Engineering (**GPA**: 3.6/4.0, cum laude)

Mar 2017-Feb 2021

## WORK EXPERIENCES

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Age of Learning, Glendale, CA

Jun 2023-Aug 2023

**Software Engineer Intern**

- Created endpoints to accept user authentication and conversation histories through API service on **Docker** utilizing **PHP** and SDK
- Developed unit tests and end-to-end testing based on test-driven development getting login tokens to check the failure scenarios
- Utilized the **Large Language Model** framework to classify users' phrases in a chatbot service by integrating ChatGPT in **Python**

K2soft, Seoul, South Korea

Jan 2022-Jun 2022

**Software Engineer**

- Increased smart farm crop yields to **12%** by developing a genetic algorithm in **Python** from 11 environment data
- Implemented a communication module between a web server and an AI secretary service of the company using **Flask** and **Apache**
- Performed live translation by recording the speech and converting it to text using **Google API** to provide **103** different languages

Artificial Intelligence Lab, Gyeonggi-do, South Korea

Mar 2019-Feb 2022

**Research Assistant under Professor Joon Shik Lim**

**Bio-Data Construction and Diseases Prediction**

- Predicted the possibility of colon cancer by developing modified Harmony Search algorithm and achieved **94%** classification accuracy in colorectal cancer gene information from Princeton University Gene Expression Projects [\*Paper\(Mathematics\)\*](#)
- Deployed a **mobile application** for predicting **5** depression levels using a Neuro-Fuzzy algorithm from wireless ECG machines

**Artificial Intelligence Convergence Research**

- Devised a reinforcement learning feature selection method in which two agents update the Q-value of each agent by comparing rewards and achieved the **97.89%** best classification accuracy than other 5 models for 3 data sets [\*Paper\(Sensors\)\*](#)

**Development of Integrated Diagnosis Solution Based on AI Technology**

- Classified normal and abnormal heart sound data with **97%** accuracy by electronic auscultation using statistical features of wavelet coefficients and cepstral coefficients collaborated with Gachon Gil Medical Center [\*Paper\(2020ICTC\)\*](#), [\*Paper\(2020BCPT\)\*](#)

**Facial Recognition and Emotion Analysis Research**

- Analyzed face data using Euclidean distance formula and extracted **2278** features with **87.6%** emotion classification
- Obtained **13%** higher accuracy than CNN and found eyes and mouth distance to be the most effective feature [\*Paper\(2021ICTC\)\*](#)

## VOLUNTEERING & PROJECTS

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USC Center for AI in Society, Los Angeles, CA

Nov 2022-Mar 2023

**Student Researcher under Professor Bistra Dilkina**

- Worked with over **20,000** spatially explicit simulation data points of wildfires across California to analyze patterns for wildfires.
- Identified plans that include one of the burn units among the **58** candidate solutions generated for each unit and exclude the others.

**Multimedia System Design**

Jan 2023-May 2023

- Designed functional interfaces for interactive exploration of video sequences by extracting and mapping data into movies in **Python**.
- Utilized **Java** to address sampling and aliasing issues by resampling and filtering images in both the spatial and temporal domains.

**Event Search Web Application** [demo link](#)

Jan 2023-Apr 2023

- Made a responsive web app using Ticketmaster, Spotify, and Google Maps API for searching all events and displaying the details.
- Built a backend server in **JavaScript** using **Node.js** and a frontend utilizing **Angular** and **Bootstrap**, then deployed on **GCP**.

## TECHNICAL SKILLS

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**Programming Language:** Python, Java, C/C++, PHP, MySQL, JavaScript, HTML, CSS, TypeScript, SwiftUI

**Tools:** Git, Artillery, SDK, Google Cloud Platform (GCP), AWS, AWS DocumentDB Arduino, Praat

**Frameworks:** Keras, Tensorflow, Numpy, Pandas, Langchain, Apache Tomcat, Angular, Bootstrap, Node.js