YUNGI JEONG

Primary Email: realyungijeongprimary@gmail.com
School Email : e1562150@u.nus.edu
https://www.linkedin.com/in/yungijeong/

Education

BACHELOR OF SCIENCE(HONS.) – National University of Singapore   August 2025 - Present
Major: Bachelor of Science in Data Science and Analytics / Minor in Computer Science (AI)

BACHELOR OF ARTS – Waseda University, Japan   September 2020 - 2021 / April 2024 – July 2025
Major: Bachelor of Arts in Liberal Arts and Mathematical Sciences / 2 years absence due to **Military Service**

Work Experience / Engagement

BACKEND LEAD / PROJECT MANAGER – Google Developer Group Waseda University   October 2024 – July 2025

- **Led** a team of 36 Backend Developers, **managing** the full project life cycle from ideation to deployment
- **Directed** all team meetings and group events, **coordinating** project timelines and fostering a collaborative environment
- **Architected** and **maintained** the backend infrastructure for 7 web applications, ensuring scalability and performance
- **Mentored** and **guided** junior developers on best practices for clean code and effective collaboration

DATA SCIENTIST – Microsoft **–** AI for Biodiversity   December 2024 – February 2025

- **Led** a group of 2 people and mainly worked on **data visualization and data analysis**, while designing the whole project flow
- Developed a buffer zone recommendation system using **Python and Geographic Information System** to prevent the genetic spread of GMOs, leveraging USDA data and **Exploratory Data Analysis** on USDA data to identify high-concentration regions
- Awarded a **Research Award** for a creative and effective solution for biodiversity (**One of the best 16 teams** to present)

LLM ENGINEER – Waseda University **–** Full-time   February 2025 – June 2025

- **Designed and developed** an **Agentic RAG AI Chatbot** with a knowledge base from Professor's data science textbook, utilizing a **vector database** : served as an **educational agent** for Waseda University's new compulsory data science course.
- **Implemented** a RAG pipeline with **Python, LangChain** (Decomposition, RAG-Fusion) and various **APIs** (OpenAI, Llama Parser)
- **Executed** full-stack engineering, building the front end with **HTML/CSS/JavaScript** and the back end with **Flask**

Skills

Programming Languages : Python, SQL, HTML/CSS/JavaScript, R

Machine Learning : RAG (Retrieved Augmented Generation), Knowledge Engineering (Knowledge Extraction, NLP (Natural Language Processing), VLM (Vision Language Models), HuggingFace, Pytorch, Tensorflow, LangChain, Vector Embeddings

Backend / Cloud: Flask, Google Cloud Platform (VertexAI, Workbench, Bucket), Firebase (Firestore Database, Authentication)

Research Projects

THERMODYNAMIC EXPLORATION IN MINIMAX GAMES (PREPRINT, 2025)   November 2025 – December 2025

- Proposed Asymmetric **Stochastic Gradient Langevin Dynamics** (SGLD), an optimization algorithm that injects thermodynamic noise into **Generative Adversarial Networks** (GANs) to escape local Nash equilibria
- Demonstrated **95.0% Mode Coverage** on the Stacked MNIST benchmark, significantly outperforming standard DCGANs (91.8%) by forcing ergodic exploration of the loss function's landscape
- Authored a technical report and released a reproducible PyTorch implementation in: https://doi.org/10.5281/zenodo.17855571

BAYESIAN UNCERTAINTY QUANTIFICATION   December 2025

- Implemented Bayesian Neural Networks using Langevin Dynamics to visualize epistemic uncertainty in out-of-distribution regions
- Analyzed the Information Bottleneck Principle, tracking the compression of mutual information $I(X;T)$ during the training dynamics of stochastic networks