Hyun Woo (Kyle) Jung

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EDUCATION

Northwestern University *Evanston, IL*   Expected Jun 2025 or earlier
B.S./M.S. (Combined Degree), Computer Science || GPA: 3.7
- Relevant Coursework: Mathematical Foundations of Computer Science, Design&Analysis of Algorithms, Artificial Intelligence, Natural Language Processing, Full-Stack Web Development, Computer Systems, Computer Networking, Data Privacy, Practicum of Intelligent Systems, Scalable Software Architectures

PROFESSIONAL EXPERIENCE

Northwestern University C3 Lab *Evanston, IL*   January 2023 – Present
Research Associate
- Developed a **natural language classifier** that translates utterances for Satyrn, a language model that allows users to investigate and analyze structured data using plain language queries
- Managed the database using **PostgreSQL** by cleaning and inserting data required for Satyrn on DigitalOcean to create rings, which provide real data to the LLM which allows Satyrn to generate information based on facts
- Created Elizabeth, a **Generative AI** digital avatar capable of conversing with humans on Zoom, by building the content generation engine using **AWS Comprehend** and **GPT 3.5** – showcased at Chicago Innovation's "AI vs. IQ" virtual event by Professor Kristian J. Hammond (event reference)

Unfound *Chicago, IL*   June 2022 – December 2022
Software Engineering Intern
- Developed and deployed the map page feature of Unfound, a mobile app for sharing and discovering unique places
- Implemented core features on the **frontend** including pins, cards for each pin, real-time user location tracking, sidebar filter, search bar, etc, using **React Native** with Mapbox and **TypeScript**
- Optimized the pin load time by **78%** by using memoization and caching data

bodyshopstore *Seoul, South Korea*   June 2021 – December 2021
Software Engineering Intern
- Built a **web scraper** using **Playwright (Node.js)** to collect market data on different types of paint and recipes, reducing the data sourcing time by **72%**, eliminating the need for manual data searching on site
- Wrote automated testing using Jest to facilitate QA of the company website
- Improved software practices, such as code documentation, Git commit message workflow, and Git organization

PERSONAL PROJECTS & RESEARCH

DPDNS (networkx, dnspython, AWS RDS, MySQL)   March 2023 – Present
- Developed a novel, privacy-preserving architecture using differential privacy in DNS queries to address the problem of public DNS resolvers having access to individual user queries – pending submission to The ACM conference
- Achieved **98% privacy rate** which indicates that the DPDNS approach effectively conceals the actual domain while maintaining **100% accurate responses**
- Reduced the query time of the DNS client from 30 seconds to under 2 seconds by parallelization
- Configured a local DNS resolver using BIND 9 on Ubuntu to collect and analyze the query logs for evaluation

ResponseGenie (React, Flask, sklearn, MongoDB, Firebase)   January 2023 – April 2023
- Created a **full-stack** web application that uses machine learning **(K-Nearest Neighbor)** to generate automatic canned responses for client email inquiries for LCBH (Law Center for Better Housing) paralegals to eliminate the process of finding relevant legal information to inquiries
- Enabled paralegals to use ResponseGenie directly on HelpScout (help desk software used by LCBH) by creating a custom component next to the email threads for user convenience

HomeHop (React Native, Express.js, AWS S3, AWS Elasticbeanstalk, MongoDB)   December 2022 – March 2023
- Created HomeHop, a **full-stack** mobile application for easy student subletting and apartment searching
- Leveraged **Redux** for global state management and used **JSON Web Tokens** for secure user authentication

SKILLS AND INTERESTS

Languages: English (native), Korean (native), French (basic)
Programming Languages: JavaScript, Python, TypeScript, HTML, CSS, SQL, Java, MATLAB, C, C++, R
Main Skills: Node.js, React, React Native, Express.js, AWS, MySQL, PostgreSQL, MongoDB, Firebase, Flask, Git, Agile