Daniel Han

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EDUCATION

Rutgers University *New Brunswick, NJ,* *Fall 2021-Spring 2025*
Double Major: Bachelor of Science in Computer Science, Bachelor in Korean 3.85/4 GPA

SKILLS

Programming: Java, Python, C, JavaScript, TypeScript, SQL, HTML, CSS, EmotionCSS, TailwindCSS, React, React.js, Svelte
Technologies: Arduino, PostgreSQL, Django, Salesforce CRM, PgAdmin4, Saleae Logic Analyzer, Kubernetes, Docker, Android Studio, Rancher, Pandas, NumPy, Matplotlib, Java Server Pages, Storybook, FireZilla, Vite, React, Git, BitBucket, GitHub
Languages: English, Korean

WORK EXPERIENCE

Rutgers University **New Brunswick, NJ**
Resident Assistant *August 2023-Present*
- Cultivate a supportive and inclusive student community, fostering positive interactions among a diverse population of 60 ethnically diverse undergraduate freshmen and upperclassmen within first year and upperclassmen apartment housing.
- Work on duty 10-15 hours per week and develop engaging monthly programs and activities to promote personal growth and academic success among residents.

First-Year Interest Group Seminar Peer Instructor *August 2024-November 2024*
- Lead a seminar course with 25 freshmen focused on "Exploring Computer Science" for 10 weeks meeting once a week in person.
- Developed engaging weekly lesson plans and facilitated a comfortable learning environment, while giving student feedback.

Nestle Nespresso **New York City, NY**
Front End Developer Internship *June 2024-August 2024*
- Built and deployed 10 React components in TypeScript for Nespresso's new homepage product listing page.
- Increased total codebase commits by 25% and updated codebase documentation on Atlassian confluence to ensure consistency.
- Deployed Storybooks for UI components, wrote test cases using React testing library, and styled components with EmotionCSS..

Colgate-Palmolive **Piscataway, NJ**
Full Stack Software Engineer Internship *July 2023-November 2023*
- Built a web application using Django that aggregated customer electric toothbrush data from Kolibree for internal reports.
- Managed subscriber based emails in Salesforce Marketing Cloud through automating API calls and testing with Python scripts.

Embedded Systems Developer Internship *January 2023-May 2023*
- Designed and developed IoT embedded systems using a Silicon Labs EFR32BG22 MCU wired to a Bosch BME688 sensor.
- Developed C code in Simplicity Studio 5 IDE to configure I2C communication and provide documentation for future use.

PROJECTS

Personal Portfolio Website (TypeScript, HTML, CSS)
- Deployed a responsive portfolio React app hosted in Firebase and connected to a custom domain name in Cloudflare.
- Maintained and updated with GitHub with a custom Yaml file to customize the GitHub actions to automate pushes to the live site.

IOS Augmented Reality Coffee Machine App (Swift)
- Created an IOS app that employs ARKit API to use a device's camera, detect surroundings, and place a 3D Nespresso machine.
- Implemented features such as plane detection, object scaling, and rotation to allow users to interact with the 3D model.
- Utilized SceneKit for rendering the 3D model, ensuring smooth integration and realistic object behavior within the environment.

Online Auction System Web Application (Java, HTML, MySQL)
- Designed a relational database system for an online auction app using MySQL, ensuring efficient data management and retrieval.
- Developed a user interface with HTML, Java, and JavaScript, facilitating user registration, login, and dynamic item search.
- Integrated backend connectivity with JDBC which communicated with the app locally using Tomcat.

Digital Circuit Simulator with Logic Gate and Component Integration (C)
- Implemented a C-based digital circuit modeling AND, OR, XOR, NOT, decoder, and multiplexer using linked lists.
- Simulated circuit functionality with dynamic memory allocation and input combinations with malloc, realloc, calloc.
- Integrated operations and variable dependency resolution, ensuring accurate computation of outputs for complex layouts.

SVD-Based Recommendation System (Python, NumPy, scikit-learn)
- Built a recommendation system using Singular Value Decomposition to predict user-item ratings with a 20% MAE improvement.
- Trained the model on a dataset of 100,000+ ratings, using gradient descent with L2 regularization to optimize latent factors for 5,000+ users and 2,000+ items across 10 epochs, reducing average training loss by 30%.
- Evaluated system performance with Precision, Recall, F1-Score, and NDCG for Top-N recommendations, an NDCG of 0.85.

Scalable Friend Recommendation System Using Hadoop MapReduce (Java, Apache Hadoop)
- Developed a Hadoop-based MapReduce program to calculate mutual friends and generate personalized friend recommendations.
- Implemented custom Mapper and Reducer classes in Java to analyze improving recommendation accuracy by 25%.
- Automated two-stage job execution using HDFS ensuring scalability and fault-tolerance in big data workflows.

AWARDS & ACTIVITIES

Rutgers Honors Program *2022-2024*
Rutgers Dean's List *Fall 2021-Present*
Rutgers Club Ultimate Frisbee *2021-Present*
Taco Bell Live Mas Scholarship Recipient *2021-2024*