Simon Lee

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U.S./South Korea Citizen

EDUCATION

CARNEGIE MELLON UNIVERSITY Pittsburgh, PA
Bachelor of Science in Electrical and Computer Engineering May 2026
Overall GPA: 3.15/4

SKILLS

Programming Languages: Python, C/C++, Java, SQL, HTML, CSS, JavaScript, MATLAB, SystemVerilog
Libraries/Frameworks: TensorFlow, Pytorch, OpenCV, Sklearn, NumPy, Matplotlib, Pandas, Keras, Hugging Face, Pillow, Flask
Software & Tools: Docker, AWS (Lambda, S3, CloudWatch), Microsoft Office, Cadence, Github, Arduino IDE

WORK EXPERIENCE

Republic of Korea Air Force
Aircraft Maintenance Engineer September 2023 - June 2025
NEXT Lab, Yonsei University Seoul, South Korea
Research Engineer Intern June - September 2023

- Used ray tracing software to enhance and optimize optical configurations for mixed reality devices, improving Near-Eye Display quality
- Applied Fourier plane imaging microscopy to evaluate and resolve issues with optical system efficiency, such as light leakage and image clarity

Undergraduate Research, Carnegie Mellon University Pittsburgh, PA
Summer Research Intern July - August 2022
Topic: Multi-Agent Path Planning: Subdimensional Expansion and Operations

- Built a program that performs multi-agent path planning in which utilizes A* search algorithm and conflict-based search to track multiple agents on a temporal plan graph
- Devised methods to improve efficiency and time complexity for the algorithm to run faster

Planet Cents, Inc. Clearlake, CA
Full Stack Developer Intern June - August 2021

- Collaborated with a cross-functional team to design and develop a prototype for a sustainable B2B & B2C eCommerce platform, aimed at securing funding
- Utilized Shopify to build and customize the prototype website's user interface
- Integrated Shopify's API with custom back-end services to manage product inventory, user authentication, and transaction processing using HTML and Shopify Liquid

PROJECTS

Image Processing Service Winter 2024

- Designed and deployed a RESTful API using Python and Flask to process images with features like resizing, cropping, and filtering, ensuring efficient and scalable backend operations.
- Built a PostgreSQL database for metadata retrieval, optimized image processing with Pillow and OpenCV, and deployed using Docker for CI/CD.

Set Scene Fall 2024

- Developed a pipeline using ResNet-50 for feature extraction, BLIP for contextual captioning, and GPT-2 to generate expanded scene descriptions.
- Optimized performance with model caching, preprocessing, and parameterized control for caption and narrative generation.

Auto-Updating Data Visualizations Summer 2024

- Developed a real-time data visualization system using Python, Matplotlib, and AWS, integrating AWS Lambda and S3 for automatic data updates and dynamic charting
- Implemented event-driven updates with AWS CloudWatch and automated deployment using AWS CodePipeline, ensuring scalable visualization updates

HONORS

Carnegie Mellon Small Undergraduate Research Grant (SURG) Program Award Spring 2022
Gold Prize, Sparklabs Tech Startup Challenge Spring 2020