

HYUNSEOK CHO

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EDUCATION

University of Illinois at Urbana-Champaign

Bachelor of Science in Computer Engineering

Champaign, IL

Aug. 2022 – Present (May 2026)

Nanyang Technological University

Engineering Study Abroad Program

Singapore, Singapore

Jan. 2024 – May 2024

Seoul National University

Computer Science International Summer Program

Seoul, South Korea

May 2023 – Aug. 2023

TECHNICAL SKILLS

Programming Languages: Python, C/C++, SQL, JavaScript, TypeScript

Web & Development Tools: React, Node.js, Flask, HTML/CSS, GitHub Actions, Postman, Figma

AI & Machine Learning: PyTorch, Transformers, LLM Benchmarking, AI Agent frameworks

Cloud, Infrastructure & Databases: AWS, GCP, Linux, Docker, Git, Nginx, Gunicorn, NoSQL, MongoDB, AWS RDS, MySQL

EXPERIENCE

AI Software Engineering Intern

June 2025 – August 2025

SAMSUNG

Seoul, South Korea

- Designed and deployed a 3-stage GUI automation agent powered by multimodal LLMs, achieving over **90%** success in desktop task automation.
- Reduced inference latency by **35%** through containerized deployment on NVIDIA H100 GPUs, improving system responsiveness and throughput.
- Designed and implemented a planning pipeline that transformed natural language into structured multi-step action plans using **few-shot prompting** and **chain-of-thought reasoning**.
- Benchmarked open-source LLMs (**Qwen**, **LLaMA**, **Gemma**) for **accuracy**, **latency**, and **decomposition**; advised production model selection.
- Collaborated across hardware and software teams to debug and optimize multi-threaded pipelines, maintaining system reliability and efficiency.

Software Engineering Intern

June 2024 – August 2024

DEEPDIVE

Seoul, South Korea

- Built and launched a **full-stack** product exchange system with **Flask + React**, streamlining CX workflows and serving **hundreds of daily requests**.
- Deployed backend on **GCP VMs**, integrated Google BigQuery for order history analytics, and created automated **SQL** pipelines.
- Architected for scalability with Nginx load balancing and Gunicorn caching, improving response time by **25%** during peak traffic.
- Proposed and led automation initiative using Google Sheets API that cut CX workload by **40%**, enabling the team to shift focus toward higher-value customer operations.

PROJECTS

CoursePlanner | github.com/hscho421/CoursePlanner

Aug. 2024 – Present

- Led development of a **full-stack** academic planning platform adopted by **UIUC students**, guiding design for scalability and usability.
- Processed UIUC's XML course data into structured **API** requests and delivered **real-time GPA insights** through Chart.js visualizations.
- Optimized backend caching and aggregation, achieving **<200ms** API response times and ensuring scalability for high query volumes.
- Deployed backend with **AWS RDS (MySQL)** and designed a modular **HTML/CSS/JavaScript** frontend for responsive UX.

Minesweeper in FPGA | github.com/hscho421/fpga-minesweeper

Aug. 2024 – Dec. 2024

- Designed and implemented Minesweeper game logic in **SystemVerilog**, structured with modular design for maintainability and reuse.
- Constructed randomized mine placement using a **Linear Feedback Shift Register**, and implemented dynamic grid updates and score management logic.
- Rendered visual output via sprite controllers: developed a **Python-based font-ROM generator** to convert sprite assets into ROM files compatible with Vivado ROM IP.
- Validated functionality through test benches and FPGA deployment, demonstrating full gameplay on a **Spartan-7** Urbana FPGA board.
- Demonstrated **hardware-software integration** and modular design principles for maintainability and **low-level resource optimization**.

CampusNav | github.com/hscho421/CampusNav

June 2024 – Oct. 2024

- Designed and implemented a **React** web application to minimize walking time between classes across a large campus.
- Integrated **Google Maps API** to compute accurate walking distances and suggest optimized routes.
- Enabled **real-time schedule visualization** with route recommendations, reducing average transition time between consecutive classes.
- Directed project development to address student pain points, incorporating peer feedback to improve planning efficiency across **300+** buildings.