

Hakyung Yun

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Education

University of Illinois at Urbana Champaign
Bachelor of Science in Computer Engineering

Graduated: Dec. 2025

Skills

Programming Languages: Python, C, C++, JavaScript, SQL, RISC-V Assembly

Skills: React.js, SystemVerilog, MySQL, Tailwind CSS, Flask, Django, Git, MongoDB

Experience

LG Energy Solution

Phoenix, AZ

ESS Systems Engineer

Jan 2026 – Present

- Led development of 6 production-grade internal platforms used daily by 10+ engineers, digitizing quality operations, traceability, defect monitoring, and shipping review workflows.
- Automated large-scale quality analytics by building an mV/day re-judgment engine that processed 80,000+ battery packs, replacing manual Excel workflows and reducing review effort by over 90%.
- Architected a battery assembly traceability system managing 2,000+ manufacturing records, providing real-time visibility across pack, link, defect, and shipment data.

Glim

Seoul, KR

Software Engineering Intern

May 2025 – Aug. 2025

- Built MFC UI for sub-pixel edge-detection on EV battery cells on the production line, reducing QA review time by 25%.
- Implemented annotated defect image export, reducing validation time by 50% and eliminating CSV cross-referencing.
- Conducted 50+ simulation runs to validate program stability before factory deployment, achieving 95% pass rate.

Illinois Business Consulting

Champaign, IL

Software Developer

Jan. 2025 – May 2025

- Modernized the survey system by migrating from vanillaJS to surveyJS, reducing maintenance overhead by 30%.
- Collaborated with 8 engineers to refactor codebase across frontend and backend, reducing bugs by 25%.
- Automated recruitment process for leadership team with a live drafting system, cutting selection time by 40%.

Synchrony

Champaign, IL

Software Engineer Intern

May 2022 – Aug. 2022

- Designed and delivered 5+ interactive dashboards in **Tableau**, providing real-time analytics and critical insights into **PCF** products and properties, streamlining data visualization and enhancing operational decision-making for the Cloud Team.
- Developed an automated **Python** program to efficiently synchronize product versions of PCF with a **MySQL** database, enabling instant removal of expired products, improving data accuracy and reducing manual overhead by 80%.
- Collaborated with VPs of Cloud Engineering Team to design and implement a scalable PCF API, automating audit jobs.

Projects

Out-of-Order Processor

- Designed and implemented a RV32IM out-of-order RISC-V processor using Tomasulo-style in SystemVerilog.
- Integrated instruction & data caches, load/store queues, and DRAM arbitration and verified with Coremark, FFT, AES-SHA, mergesort, and compression benchmarks.
- Optimized memory behavior with prefetching and cache enhancements, analyzing IPC, power, and delay tradeoffs.

Operating System

- Developed a Unix-like operating system supporting user program execution, virtual memory management, and system calls, using **C**, **RISC-V assembly**.
- Implemented virtual memory system with multi-level page tables, demand paging, and secure memory isolation for user processes.
- Implemented process abstraction and ELF loader, enabling dynamic program loading, trap-based user/kernel transitions.