Sanghyun Joshua Cho

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Self-motivated systems/software engineer with a problem solving mindset, having experience in C++, Python, and TypeScript, JavaScript, building compilers, and production web apps.

EDUCATION

Purdue University, College of Science — West Lafayette, IN

Bachelor of Science in Computer Science, Focus: Systems Engineering — *May 2027*

- **Relevant Coursework**: Object-Oriented Programming in Java, Discrete Mathematics, Programming in C, Computer Architecture, Data Structures and Algorithms, Advanced Algorithms, Compilers

EXPERIENCE

Electrical Engineering Systems Assistant | Python, Linux — *Oct 2025 – Present*

Purdue University — *West Lafayette, IN*

- Automated facility data collection via Python, transforming raw sensor logs into structured datasets for faculty
- Boosted lab uptime by 12% by analyzing time-series sensor logs in Python to surface usage and failure patterns
- Generated repeatable reports for faculty that highlighted peak load hours and underutilized equipment blocks

Systems Programmer | C++, Unreal Engine — *May 2025 – Oct 2025*

Oathbound Studios — *West Lafayette, IN*

- Acted as technical point of contact, advising a cross-functional team of 20+ people on object-oriented design patterns
- Reviewed pull requests and helped standardize coding conventions, raising overall code quality across the team
- Built core gameplay systems with modular engine components, improving maintainability and accelerating features
- Ported performance critical Blueprint systems into native C++ classes, cutting interpretation overhead by 16%

PROJECTS

StudyBudy | JavaScript, HTML, CSS

- Developed a Purdue study partner matcher, placing 1st out of 100 participants at an Anthropic sponsored hackathon
- Used Purdue's internal GENAI to score study partner compatibility and generate proximity study locations
- Interfaced the React.js frontend with cloud-native architecture through Firebase for secure onboarding and file upload

Mini C Compiler | C/C++, Lex, Yacc

- Constructed a compiler in C++ for a simplified C language, running machine instructions on a Unix operating system
- Implemented program analysis which detects syntax errors and tracks dataflow, eliminating dead code by 30%
- Used Lex and Yacc for the compiler's parser, producing ASTs (abstract syntax trees) that translate to low-level code
- Wrote unit tests for core compiler components, catching late stage regressions early and improving overall scalability

Heater App | iOS, Swift

- Designed a Swift iOS app for discussing live sports games, using a MVVM (Model-View-ViewModel) architecture
- Built user login and real-time storage using Firebase Auth and Firestore to maintain consistency across devices
- Deployed to a community of over 750 users, with a SQLite API for sports metadata to reduce user requests by 21%

Beatproof | TypeScript

- Crafted a Solana audio marketplace using Next.js, TypeScript, and Solana Web3 RPCs (Remote Procedure Call)
- Utilized Phantom wallet onboarding to reduce wallet drop-offs and strengthen user conversion
- Improved reliability by streamlining data validation and interaction with Solana services, shortening retests by 44%

SKILLS

Languages: C++, C, C# Swift, Python, Bash, Ruby, Java, JavaScript/TypeScript

Technologies: Git, Lex/Yacc, Unix/Linux Systems, Next.js, Firebase, Solana, Docker, Agile

Concepts: Data Analysis, Software Engineering, Web Frameworks, Databases, Full stack, Frontend, Backend, Cloud Computing, Multithreading, REST API, CI/CD, AWS, GenAI, SDLC, Defensive Programming