

Swastik Agarwala

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EDUCATION

Purdue University

West Lafayette, IN

B.S. in Computer Science, Minor in Math, Economics (GPA: 3.95/4.0, Dean's List)

Expected May 2026

Courses: Software Engineering, Operating Systems, Machine Learning, OOP, Data Structures, Spring Framework (Spring Academy), Algorithms (Stanford University), React (Meta)

SKILLS

Languages: Java, Python, JavaScript, TypeScript, HTML, CSS, SQL (PostgreSQL), C, C++

Technologies: React, Spring, Redux, Express.js, Flutter, JUnit, pandas, NumPy, Matplotlib

DevOps Tools: Git, Docker, AWS, Firebase, Linux, Bash

EXPERIENCE

SML ISUZU Ltd. (Vehicle Manufacturing) – Software Engineering Intern

May 2024 – July 2024

- Developed a React Native (Expo) app to track factory equipment repair status for 400+ employees.
- Integrated with SAP back-end and database to monitor hardware specifications, location, and repair status.
- Designed a notifications board for real-time updates, reducing delays in the repair processes.

Jyoti Portfolio Pvt. Ltd. (Stock Broking) – Software Engineering Intern

June 2023 – July 2023

- Created a Java (Maven) desktop client for the NSE India Extranet API to manipulate broker account files.
- Designed a user-friendly UI with Java Swing to browse and download items from the file-system API.
- Devised a query definition system for downloading lists of files, saving 3+ hours of daily manual work.

EPICS Information Management Systems – Developer

Jan 2023 – May 2023

- Developed a Flutter-based nutrition app for kidney disease patients, endorsed by the National Kidney Foundation.
- Utilized Firebase to store and track precise nutrient intake and dynamically calculate diet recommendations.
- Implemented push notifications to deliver recommendations, boosting prescription compliance by 30%.

PROJECTS

CourseBot | OpenAI API, Spring, TypeScript, React, PostgreSQL, Docker | [GitHub](#)

Aug 2024

- Developed a full-stack application using Spring Boot, React, and PostgreSQL to scrape free online resources and create custom programming courses based on user-specific needs like topic, time constraints, and expertise level.
- Utilized the OpenAI API to summarize, categorize into topics, and rank by expertise level the scraped content.
- Leveraged the OpenAI API to analyze user requirements and generate tailored courses using the curated content.

Gesture & Speech Browser Control | Python, OpenCV, Concurrency, MediaPipe | [GitHub](#)

Jan 2024

- Engineered a Python app and Chrome extension to invoke browser actions (navigation, scrolling) via hand gestures and voice commands, integrating video (OpenCV) and speech (PocketSphinx) concurrently using multiprocessing.
- Tracked positions of fixed landmark points on the human hand using MediaPipe and mapped them to gestures.
- Established real-time communication between the Python app and Chrome extension via web-sockets.

Custom Unix Shell (Bash Strategy) | C++, Lex, Yacc, Unix, Bash, OOP

Jan 2024 – May 2024

- Leveraged appropriate system calls to pipe executables, manipulate processes, and handle environment variables.
- Employed Lex/Yacc for parsing, and OOP to interpret, store, and execute different types and lists of commands.
- Implemented features such as sub-shells, wildcards, interpolations, conditional statements, loops, and more.

LEADERSHIP

Boiler Gold Rush (Purdue Orientation Programs) – Team Leader

Mar 2023 – Present

- Represented in Purdue's freshman orientation program, introducing students to traditions and opportunities.
- Guided 40+ new students, ensuring a smooth transition to campus life and fostering an inclusive environment.

Hello World Hackathon 2023 – Exec Team Member

Jan 2023 – Sep 2023

- Organized a hackathon at Purdue with 300+ participants aimed at introducing freshmen to hackathon culture.
- Coordinated organizers, developed the event website, and helped raise funds through sponsorships.