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*
Coursework: Software Engineering, Operating Systems, Machine Learning, C Programming,
OOP, Data Structures, Algorithms, Spring Certified Professional (Spring Academy)
Certifications: Algorithms Specialization (Stanford University), Advanced 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 – Jul 2024
- Developed a React Native (Expo) app to track factory equipment repair status for 400+ employees.
- Integrated with SAP backend 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*   Jun 2023 – Jul 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
- Worked on a nutrition app for kidney disease patients using Flutter as part of a Purdue student project, endorsed by the National Kidney Foundation, to deliver safe, personalized diet recommendations and exercise routines.
- Utilized Firebase to store and track precise nutrient intake and continuously update recommendations.
- Implemented push notifications to deliver recommendations, improving prescription compliance by 30%.

Purdue Student Services – *Undergraduate Teaching Assistant*   Jan 2024 – Present
- Held lectures, office hours, and operated online forums for C Programming, Systems, and Discrete Math courses.

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 programming courses tailored to user-specific needs like topic, time constraints, and expertise level.
- Utilized OpenAI API to summarize, categorize into topics, and rank by expertise level the scraped content.
- Analyzed user requirements using OpenAI API, and generated the tailored course using the scraped content.

Gesture & Speech Browser Control | *Python, OpenCV, Concurrency, MediaPipe* | GitHub   Jan 2024
- Engineered a Python application to capture hand gestures and voice commands and a Chrome extension to translate them into effects in the browser such as navigation, scrolling, volume adjustment, etc.
- Integrated OpenCV for video and PocketSphinx for speech concurrently leveraging Python multiprocessing.
- Tracked positions of fixed landmark points on the hand using MediaPipe and mapped them to intuitive gestures.
- Established real-time communication between the Python app and the 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
- Participated 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.