

DIYA SINGH

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EDUCATION

M.S. in Computer Science, Purdue University

Aug 2025 - May 2027

Coursework: Operating Systems, Parallel Computing, Artificial Intelligence, Data Mining, Human-Computer Interaction, Statistical ML

B.S. in Computer Science, Purdue University

Aug 2022 - May 2026

Minor: Mathematics, Art & Design | Concentrations: Systems Software, Algorithmic Foundations, Machine Intelligence, Computer Graphics

Coursework: Operating Systems, Compilers, Systems Programming, Computer Networks, Security, Data Structures & Algorithms, Advanced Topics in Algorithms, Data Engineering, Numerical Methods

TECHNICAL SKILLS

Languages: C/C++, Java, Python, SQL, Bash, JavaScript

Systems / Infra: Linux/Unix, POSIX, TCP/IP, Docker, Terraform, GitHub Actions, Git, Google Cloud Platform, Azure

Backend / Web: FastAPI, SQLAlchemy, Postgres, MySQL, Supabase, React

ML / Data: PyTorch, TensorFlow, scikit-learn, pandas, NumPy, Hugging Face, LangChain

EXPERIENCE

AI & ML Automation Intern, Envita Solutions

May 2026 - Aug 2026

- Built an end-to-end Python email pipeline, integrated into the live Azure platform as its own Docker service (2,000+ emails/min).
- Served as on-call engineer triaging production failures; wrote 180+ unit/integration tests to prevent regressions.
- Added structured logging and a human-review fallback, raising classification accuracy 60% to 99.12% and extraction to 90%.

Product Development Intern, FractalHive

Jul 2025 - Sep 2025

- Built Python/Supabase (Postgres) backend and React UI for an education client's audit app, cutting manual processing 30%.
- Designed validated database schema with role-based access control for a B2B banking platform's manager/underwriter workflows.

Head Undergraduate Teaching Assistant, CS180, Purdue University

Aug 2025 - May 2026

- Taught weekly Friday lectures for 400+ students in Problem Solving & OOP, live-coding Java to tie concepts to applications.
- Created lecture slides as students' preferred study resource; coordinated graders and mentored on debugging.

Discovery Undergraduate Research Intern (DUIRI), Purdue University

Jan 2025 - Present

- Built Walkability Assistant from Python LDA analysis of 2M+ user reviews; prototype lifted engagement 25%; paper in progress.

Machine Learning Intern, nRoad

May 2024 - Jul 2024

- Built a financial document-parsing microservice with a REST API (FastAPI) and SQLAlchemy/MySQL persistence layer.

Undergraduate Researcher, Purdue University - Dr. Wenzhuo Wu's Lab

Aug 2023 - Jan 2024

- Developed test-driven C++ printer motor control and optimized wearable tinyML models within tight embedded memory limits.

SELECTED PROJECTS

Procedural 3D Tree Generator

Nov 2025

- Extended a C++17/OpenGL 3.3 tree generator using L-system grammars and turtle graphics to grow continuous branching structures.
- Added procedurally generated flowers and leaves rendered with GLSL shaders and noise, using no textures or external assets.
- Integrated SDL2, GLM, and ImGui for a real-time turntable camera, live parameter tuning, and in-app screenshot capture.

Live Streaming Application

Apr 2025 - May 2025

- Engineered a real-time live-streaming server in Docker containers, deployed publicly on a Google Cloud Platform VM.
- Automated pcap capture and packet-level analysis to profile streaming performance across varied network conditions.

Custom Unix Shell

Sep 2024

- Built a Unix-like shell in C supporting process control, I/O redirection, and piping, using fork/exec/wait and POSIX system calls.
- Implemented signal handling and job control (fg/bg jobs, SIGINT/SIGTSTP) to reliably manage concurrent child processes.

Multi-Threaded HTTP Server

Oct 2024

- Built an HTTP/1.1 server in C++ on POSIX sockets with iterative, fork, thread-per-request, and thread-pool modes.
- Added CGI execution via fork/exec, HTTP Basic auth, sortable directory listings, SIGCHLD reaping, and request-timing stats.

LEADERSHIP & HONORS

- **Leadership:** Design Team Lead, BoilerMake Exec Board (2023-26); Director of Technology, Purdue Student Government (2024)
- **Honors:** Ford Motor Company Scholarship (2024); Purdue CS Corporate Partners Scholarship (2025); Pillars of Excellency Award: Teaching and Scholarship (2024); Jandos Scholar – Women in Science Program (2024)