

# SATWIK SHRESTH

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## EDUCATION

### Drexel University

Anticipated Graduation: June 2025

Bachelor of Science in Computer Science

Cumulative GPA : 3.83

**Relevant Coursework:** Machine Learning, Concurrent Programming, Database Systems, Adv Web Development, Linear Algebra, Logic Design, Probability and Statistics, Network Programming, Software Architecture

## TECHNICAL SKILLS

<b>Languages</b>	Bash, C, C++, Haskell, Java, JavaScript, TypeScript, Go, Lua, Python, Racket, SQL
<b>Tools &amp; Technologies</b>	Docker, Kubernetes, Elasticsearch, Git, GitLab CI/CD, Grafana, Jenkins Jira, Kafka, Node.js, Perforce, Postgres, RESTful APIs SQLite, Vim, TCP/UDP Deno, JsonWebToken, OpenAPI, Swagger, Nginx, Caddy
<b>Frameworks</b>	Express.js, Flask, Svelte, React.js, Hono.js, Vue.js, FastAPI, PyTest, Remix, Next.js
<b>Libraries</b>	SQLAlchemy, NumPy, Drizzle, Ejs, Jinja, Zustand, Redux, Tanstack Query
<b>Platforms</b>	Linux, MacOS, Windows

## EXPERIENCE

### Susquehanna International Group

Bala Cynwyd, PA

*Software Engineer Co-op, Team Order Routing and Quoting*

September 2023 -March 2024

- Built a **C++** protocol metrics publisher that tails multiple files to process **5.8 billion** messages per day
- Developed a concurrent **Kafka** consumer client using **Python** to process **500 million** messages in under 5 minutes
- Developed a **FastAPI** proxy to integrate Grafana with an internal messaging platform via **RESTful API**
- Designed CI/CD pipeline for **Kubernetes** deployment and automated testing for projects on **GitLab**

### OPEX Corporation

Moorestown, NJ

*Software Engineer Co-op, Warehouse Automation and Robotics*

September 2022 - March 2023

- Engineered async Windows inter-process communication solution among **C++** applications, reducing latency by 80%
- Developed Python tool with Doxygen integrating 15,000 pages of documentation into a **C++** robot host application, creating a direct access to relevant help pages, reducing troubleshooting time 40%

### College of Computing, Drexel University

Philadelphia, PA

*Teaching Assistant (5+ 300 level courses)*

September 2022 - Present

- Mentoring over 150 students during weekly labs and tutoring hours by helping them grasp complex concepts
- Developed a Python tool to automate compiling & organizing assignments, reducing the time spent grading by **80%**

## PERSONAL PROJECTS

### Path Finding Visualizer

**Tech Stack:** SFML, CMake, C++

- Designed an interactive grid for visualizing path finding algorithms using **C++** and SFML
- Integrated A\* and Dijkstra's algorithm for path finding and Kruskal's algorithm for dynamic maze generation

### Shelved - <https://shelved.satwik.dev> **Tech Stack:** Docker, Express.js, JavaScript, Knex.js, Node.js, Postgres

- Developed a full-stack application to allow users to track and review multimedia content they consume
- Implemented content saving, reviewing, friend management and recommendation
- Designed and enforced robust authentication, input validation, rate-limiting and LRU Cache functionalities

### Library - <https://cs478.satwik.dev> **Tech Stack:** Docker, TanStack Query, Express.js, JWT, React.js, SQLite

- Developed a fully typed full-stack application to manage books and authors data
- Implemented security features for authentication and input validation to protect against XSS and CSRF attacks
- Deployed on my personal VPS with other containerized projects using Docker Compose, Nginx and Caddy

## ACHIEVEMENTS AND INVOLVEMENTS

Dean's List, Drexel University

March 2021 - Present

Photographer, Pennoni Honors College

January 2022 - Present