

Yatharth Jain

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EDUCATION

Purdue University

B.S. in Computer Science

West Lafayette, Indiana

Expected Graduation, May 2027

- o **Related Coursework:** Data Structures and Algorithms, Computer Architecture, Intro to Object-Oriented Programming in Java, Programming in C, Discrete Math, Linear Algebra, Introduction to Statistics
- o **GPA:** 3.82/4.00

EXPERIENCE

CoolR Group Inc.

Software Engineering Intern

Ashburn, Virginia

May 2025 – Current

- Developed an intelligent enterprise chatbot using Python, FastAPI, and Langchain that integrates OpenAI GPT-3.5 with Elasticsearch to enable natural language search and retrieval of knowledge base documents and cluster status.
- Engineered a secure, web-based UI with HTML/CSS/JavaScript for real-time user interaction, leveraging Pydantic for data validation and dotenv for environment management, resulting in improved information accessibility.
- Developed a secure RESTful API using Node.js and TypeScript that provides controlled access to international trade data stored in Elasticsearch.
- Built a Model Context Protocol (MCP) server with advanced search and aggregation capabilities for trade data analysis based on the Elasticsearch cluster, implementing field-specific queries, multi-metric aggregations (sum, avg, max, min, count), and structured data access patterns for financial trade records.

The Data Mine

Undergraduate Data Science Researcher

West Lafayette, Indiana

Aug 2024 – May 2025

- Worked in the analytics team as part of the Data Mine Corporate Partners Program in collaboration with Caterpillar from January.
- Worked with a team of 12 people using Agile methodology and using technologies such as ScienceLogic to navigate insights and enable monitoring of metrics and management of databases through a single platform.
- Created Science Logic system tickets to track metrics such as active processes to power a Grafana Dashboard.
- Enhanced data visualization and reporting processes by leveraging Python libraries, such as Pandas, Matplotlib, and NumPy, and R environment tools, improving the clarity and usability of findings in the general cohort.

PROJECTS

School Management System

May 2025

- Developed a full-stack AI-powered school management system using Node.js/Express, MySQL, and Python/Gradio, integrating OpenAI API with function calling to enable natural language queries for student-subject data, ID resolution, and name-based searches.

BoilerMake Hackathon

Feb 2025

- Engineered a full-stack web app with a Python backend and responsive frontend (HTML/CSS/JS) to generate AI-driven melodies using probabilistic models and Markov Chains.
- Built real-time server-client architecture with a virtual piano interface and a "Text-to-MIDI" feature that converts emotional tone in text into musical output.

BizChat - Social Messaging Platform

Oct 2024 - Dec 2024

- Developed a Java-based multi-user messaging app with Swing UI, real-time chat, friend management, blocking, and persistent user data via serialization.
- Built a multithreaded server using the Runnable interface for concurrent client handling, applying OOP principles and JUnit testing to ensure robust, scalable performance.

SKILLS

Languages: Python, Java, C, JavaScript, TypeScript, SQL, R, Bash

Web & Frameworks: Node.js, Express, FastAPI, HTML, CSS, Gradio, Langchain

Databases: MySQL, Elasticsearch

Tools & Platforms: Git, Linux, IntelliJ, PyCharm, VS Code, Android Studio, Jupyter Notebooks, ScienceLogic

Testing: JUnit, Pydantic

Others: REST APIs, Multithreading, OOP, Agile, OpenAI API Integration