

# Parth Patil

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## Experience

### Digital Nexus AI

27 May 2025 – 27 Sep 2025

LLM/Generative AI

#### Project: Code Debugger

- Developed a local code execution and debugging tool with automated language detection (C, C++, Python, Java) using regex-based heuristics.
- Implemented a sandboxed execution flow using temporary files and subprocess calls to safely compile and run user code.
- Built an evaluation module that compares program output against predefined test cases and generates helpful debugging feedback.
- Designed a modular structure for adding new languages or execution rules without rewriting core logic.

#### Project: MCP (Model Context Protocol) Server

- Built and customized an MCP (Model Context Protocol) server by working iteratively with AI tools (ChatGPT, DeepSeek) to understand architecture, generate boilerplate code, and troubleshoot complex components.
- Adapted and integrated AI-generated modules for routing, middleware, authentication, and debugging, ensuring they functioned together as a stable server system.
- Learned to evaluate, modify, and refactor LLM-generated code, improving readability, structure, and maintainability across multiple server components.
- Gained hands-on experience in managing AI-assisted development workflows, including prompt engineering, iterative refinement, and validating AI-produced logic.

## Projects

### Robotic Trash Collector

Python, YOLOv8

- Built a deep learning-based system to detect floating waste (plastic bottles, cans, cups) using YOLOv8.
- Achieved 80%+ precision on Kaggle-based dataset during classification tasks.
- Integrated Python + OpenCV for real-time video processing and tracking.
- Designed modular architecture supporting future upgrades such as autonomous navigation and solar-powered operation.

## Skills

**Languages** C, C++, Python, Java

**Backend** Spring 6, Spring Boot 3, REST APIs

**Databases** MySQL, MongoDB

**Tools** Postman, GitHub, Git

**Concepts** Machine Learning, Deep Learning, DSA, OOP, Generative AI

**models** Transformer, LSTM, RNN, CNN, GAN

## Education

Pimpri Chinchwad College of Engineering, Pune (PCCOE)

2023 – Present

B.Tech in Computer Engineering

SNBP School and Jr. College, Rahatani

2021 – 2023

Higher Secondary Education (HSC)

Indira National School, Pune

2021

Secondary Education (CBSE)

## Certifications

- Introduction to SQL — Simplilearn
- Data Structures in C++ — Udemy
- Java Basic to Advanced — Udemy

## Extracurricular Activities

Spectrum (Jan 2024 – Feb 2024)

- Marketing Sponsorship Team Head
- Core Organizing Team Member

ACM Student Chapter (Sep 2024 – Apr 2025)

- Marketing Team Member