

Tirth Rathod

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Professional Summary

Junior Software Engineer and Diploma in Computer Engineering student with practical experience developing full-stack applications, APIs, database-backed workflows, and AI-assisted tools. Also exploring computer architecture, digital logic, embedded systems, and IoT through hands-on learning projects, including an 8-bit CPU design exercise and a sensor-based water-level monitoring system. Interested in bridging software with computer hardware and embedded intelligence.

Experience

Junior Software Engineer <i>CodePoets</i>	Aug. 2026 – Present <i>Ahmedabad, India</i>
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- Contribute to application development and implementation of software features and workflows.
- Investigate application issues, reproduce bugs, and support debugging and end-to-end testing.
- Validate integrated features and application behavior to improve software quality and reliability.

Selected Projects

8-bit CPU – Computer Architecture Learning Project

- Explored how a simple processor can be organized around core building blocks such as registers, an arithmetic logic unit (ALU), a control unit, and instruction execution.
- Used the project as a learning exercise to understand datapaths, control signals, binary arithmetic, and the fetch–decode–execute cycle.

IoT Water-Level Monitoring System | Arduino, Ultrasonic Sensor, C/C++

- Built a sensor-based prototype to estimate water level and classify the tank state, including normal and empty-level conditions.
- Tested sensor readings and serial telemetry, and investigated no-echo readings and invalid measurements during hardware testing.

Waitlist | Next.js, TypeScript, Supabase, Tauri, Expo, Rust

- Developed a restaurant queue-management and POS platform covering queues, table assignment, orders, billing, and payment tracking.
- Worked across web administration, desktop, and mobile captain interfaces, including printer integration and kitchen-order workflows.

DigitalPlacement Portal | Next.js, TypeScript, Supabase, PostgreSQL

- Built a placement-management platform for students, mentors, faculty, companies, and administrators.
- Implemented placement drives, job applications, eligibility workflows, role-based access, and dashboards.

FRIDAY – Personal AI Assistant | Python, FastAPI, LangGraph

- Building a modular personal assistant backend and exploring agent workflows, AI-provider integrations, and natural-language task assistance.

tirth-ui | React, TypeScript, Tailwind CSS, pnpm

- Building a reusable UI component library and organizing a pnpm workspace with component documentation.

Education

R.C. Technical Institute <i>Diploma in Computer Engineering</i>	Ahmedabad, Gujarat <i>Expected Graduation: 2027</i>
The H.B. Kapadiya School <i>Science Stream</i>	Ahmedabad, Gujarat <i>Through Grade 11</i>

Technical Skills

Programming: Python, C, C++, Java, JavaScript, TypeScript, SQL, HTML, CSS

Hardware & Systems: Computer architecture fundamentals, 8-bit CPU concepts, digital logic fundamentals, binary arithmetic, registers and ALU concepts, basic electronics, sensor interfacing, serial debugging

Embedded & IoT: Arduino, ultrasonic distance sensing, water-level monitoring, microcontroller prototyping, embedded C/C++ fundamentals

Software: React, Next.js, Tailwind CSS, Node.js, FastAPI, Flask, REST APIs

Databases: PostgreSQL, Supabase, MongoDB, SQLite

AI Development: LLM integration, AI agents, LangChain, LangGraph, Gemini, NVIDIA NIM

Tools: Git, GitHub, Linux, VS Code, Docker, Vercel, pnpm, n8n

Certifications & Courses

Kaggle: Intro to Machine Learning (2025)

Microsoft Learn: Machine Learning Fundamentals, Fundamental AI Concepts, Azure AI Fundamentals, Python (2024)

Google Applied Digital Skills: Introduction to Generative AI (2024)

AI Agent Development: Coursework covering CrewAI, AutoGen, LangChain, AG2, and agent memory (2025)