

Vedant Thapar

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Computer Science graduate (BITS Pilani Dubai, 2026) building AI-driven automation, API-driven backends, and data pipelines in Python, Go, and Node.js. Currently developing agent orchestration services with LangChain at 1Kosmos; previously automated cloud data pipelines on GCP at Mondelez and built test automation tooling at Underscore Cybersecurity. Hands-on with RAG, MCP tooling, LangGraph, FastAPI, PostgreSQL, ChromaDB, Docker, and Kubernetes on Linux.

EDUCATION

BITS Pilani, Dubai Campus

Bachelor of Engineering, Computer Science | CGPA: 8.62

Dubai, UAE

Sep. 2022 – Jun. 2026

EXPERIENCE

Intern, R&D

Aug 2026 – Present

1Kosmos Cybersecurity

New Delhi, India

- Designing and developing SaaS APIs for CRUD agents using Node.js and Python, standardizing agent interactions within the company's internal agentic services platform
- Creating an agent control plane using Python and LangChain for centralized agent creation, orchestration, and lifecycle management.

Strategy Intern

Aug 2025 – Jan 2026

Mondelez International

Dubai, UAE

- Built automated data pipelines integrating legacy Sales and RTM reporting systems with Google Cloud Platform analytics infrastructure, based on BigQuery with Spark
- Developed Python scripts to scrape and process NielsenIQ product datasets, improving internal reporting automation
- Collaborated with the Global Head of Digital Services on AI validation initiatives aimed at detecting fraudulent Mondelez products on retail shelves
- Worked with the Digital Acceleration team to design reporting tools supporting promotion planning and performance tracking

Cybersecurity Intern

May 2024 - Aug 2024

Underscore Cybersecurity

New Delhi, India

- Developed 'F-Detector', a Python-based network analysis tool using Fourier Transform techniques to detect bot-like activity, improving detection accuracy by 30%
- Built an internal Python framework with a team of six engineers to streamline cybersecurity testing workflows
- Enhanced internal testing tools, increasing automated testing efficiency by 20%

Web and SEO Intern

Jun 2025 - Aug 2025

Innotek – Kosha Yoga

Mumbai, India

- Managed and optimized the company website, ensuring 99% uptime across mobile and desktop environments.
- Implemented technical SEO improvements including metadata structuring, keyword optimization, and sitemap generation, increasing organic traffic by 30%
- Configured hosting infrastructure, DNS systems, and server security protocols for reliable and scalable deployment
- Developed a Python-based chatbot that improved customer engagement and reduced response time for user queries

PROJECTS

Apex | Go, SQLite

- Go terminal application that models a developer's skills and project portfolio and uses it to generate prioritized action items, propose new projects, and implement them on request
- Two separate loops: an LLM advisor reasoning across the whole portfolio, and a builder that dispatches briefed tasks to an external coding agent behind a swappable interface, streaming structured events into a Bubble Tea TUI.
- Provider abstraction spanning the Anthropic and OpenAI APIs plus subscription-backed inference through the Claude Code CLI, normalizing streaming and schema-constrained output behind a single interface.

- Local-first pure-Go SQLite persistence with forward-only additive migrations, compare-and-swap cross-machine locking and flock-based concurrency control, keeping the full portfolio in-context via per-project digests keyed to a content-and-git-state hash.

NovaRV | *SystemVerilog, C*

- Designed and implemented a 5-stage pipelined RISC-V 32-bit instruction CPU in SystemVerilog
- Developed assertion-based verification framework using SVA
- Achieved over 95% functional coverage through constrained-random testing and self-checking scoreboards
- Implemented hazard detection, forwarding, branch flushing, and pipeline verification

SQLSense: MCP Natural Language/SQL Query System | *Python, Claude, formerly LangChain and LangGraph*

- Generates and executes SQL queries on a PostgreSQL Database based on a natural language prompt
- Currently using LangChain and LangGraph, but being rewritten to use custom MCP orchestration
- Frontend built in Vercel

ScholarAG: RAG-based study assistant | *LangChain, GPT-4o, LangGraph, ChromaDB*

- RAG-based study assistant, designed for reading textbooks, and generating study notes or answering questions.
- LangChain-based PDF reading, OpenAI embeddings
- ChromaDB vector databasing
- GPT-4o model handling retrieval and NLP
- Frontend built in Streamlit.

R-Lox: Interpreted Programming Language | *Rust*

- Built a custom interpreted programming language inspired by Lox using Rust
- Implemented lexer, parser, interpreter, and REPL environment with support for recursion, scoping resolution, functional patterns, and imperative paradigms

RotiOS: Custom Operating System | *NASM Assembly (64-bit), UEFI Specifications*

- Building a minimalist operating system kernel for x86-64 architecture
- Implementing low-level memory management and interrupt handling.

TECHNICAL SKILLS

Languages: Python, Go, C/C++, Rust, Java, JavaScript, TypeScript, SystemVerilog

Full-Stack: React, Node.js, FastAPI, REST API design, Streamlit

AI Engineering: LangChain, LangGraph, RAG, MCP, Anthropic and OpenAI APIs, PyTorch, TensorFlow, Keras

Data Engineering: PostgreSQL, MongoDB, SQLite, ChromaDB, BigQuery, Apache Spark, Apache Airflow, Pandas, NumPy

Cloud and DevOps: Google Cloud Platform, Docker, Kubernetes, Git, GitHub, Linux