

SIDDHARTH SINGH

siddharthwolverine@gmail.com

Phone: 7355208142 | [LinkedIn](#) |

Technology Researcher with 4+ years of experience building Agentic AI solutions using LLMs, semantic search, and scalable web frameworks.

Technical Skills

Backend & APIs	FastAPI, Django, Django REST Framework, SQLAlchemy, SqlAdmin
Frontend	Angular JS, Chainlit, Gradio, Bootstrap
Database	PostgreSQL
Authentication & Security	Keycloak
AI & Agentic Frameworks	CrewAI, LangChain, LangGraph, OpenAI SDK
GenAI & LLM Techniques	Agentic AI, Retrieval-Augmented Generation (RAG), Semantic Search, Prompt Engineering
Machine Learning & NLP	Natural Language Processing (NLP), Machine Learning, Deep Learning
Data Analytics & BI	Power BI, Tableau, Microsoft Excel

Experience

May 2024 - PRESENT

TATA CONSULTANCY SERVICES, Bengaluru – Researcher

- Designed and developed intelligent, scalable software solutions leveraging AI, data engineering, and modern web architectures to solve complex business problems.
- Currently developing an Agentic AI application integrating Large Language Models (LLMs) with a custom semantic knowledge engine, enabling users to query uploaded documents via a context-aware chatbot interface.
- Implemented document parsing, chunking, embedding, and indexing pipelines, using cosine similarity-based semantic search to retrieve the most relevant knowledge instead of passing entire documents to the LLM, improving efficiency and response quality.
- Architected a secure, full-stack system using FastAPI, Django, PostgreSQL, and AngularJS, ensuring modular APIs, role-based access control, and a smooth user experience.
- Applied Retrieval-Augmented Generation (RAG) techniques and experimented with embeddings and semantic search strategies to enhance accuracy, reduce hallucinations, and improve system performance.
- Previously contributed to the Patent Analytics Tool (PAT), a platform enabling organizations to analyze large volumes of patent data for R&D strategy, competitive intelligence, and IP management.
- Enhanced patent search, classification recommendations, and strategic reporting features, supporting identification of emerging technology trends and innovation opportunities.
- Strengthened application performance, security, and compliance through bug fixes, deployment support, and IP Safe Assessments, ensuring enterprise-grade reliability.
- Authored architecture documentation and user guides, enabling smoother adoption and effective knowledge transfer across teams.

Aug 2021 – April 2024

TATA CONSULTANCY SERVICES, Bengaluru – System Engineer

- Supported infrastructure monitoring and operations using SolarWinds and NewRelic, ensuring system stability and operational readiness.
- Played a key role in a data-driven transformation initiative for a leading retail client, addressing the challenge of analyzing 65,000+ monthly alerts to improve IT operational efficiency.
- Drove the adoption of Power BI for alert analytics and reporting, replacing manual workflows and reducing analysis time from hours to minutes.
- Built and maintained a centralized data repository integrated with Power BI, improving data accuracy and eliminating repetitive data-cleaning efforts.
- Developed interactive dashboards delivering actionable insights for stakeholders, including a comprehensive operational dashboard for Starbucks, supporting faster decision-making and improved system reliability.

Projects

[CodeSmith AI – Autonomous AI Developer](#) - [Python | CrewAI | OpenAI | Agentic AI | Docker | Prompt Engineering]

- Designed and developed an autonomous AI coding assistant that plans, generates, executes, and evaluates code from natural language instructions using multi-agent orchestration.
- Implemented CrewAI-based agent workflows to coordinate task understanding, code generation, execution, and result validation, producing structured, human-readable outputs.

- Integrated containerized code execution using Docker, enabling secure, isolated, and reproducible runtime environments for safe evaluation of generated programs.
- Built a JSON-based response framework returning generated code, execution results, logs, and metadata to support downstream automation and analysis.
- Enabled dynamic multi-language execution (currently optimized for Python) with safety controls such as runtime limits and automated retry mechanisms to handle failures gracefully.
- Enhanced developer experience by implementing a Rich-powered terminal UI with syntax highlighting and structured output visualization.

Deep Research Analysis – AI-Powered Research Orchestrator – [Python | OpenAI SDK | Agentic AI | Async Processing | Gradio | Prompt Engineering]

- Designed and developed an AI-driven research orchestration system that automates end-to-end topic exploration, content synthesis, and report generation using multiple asynchronous agents.
- Implemented an agent-based pipeline to perform web research, summarize findings, and synthesize insights into a structured Markdown report, reducing manual research effort significantly.
- Built an interactive Gradio interface enabling users to trigger deep research workflows and visualize intermediate and final outputs in a clean, user-friendly UI.
- Orchestrated asynchronous task execution to improve throughput and responsiveness while coordinating search, analysis, and report generation stages.
- Automated report delivery via email, enabling seamless sharing of finalized research outputs without manual intervention.

StockPicker AI - Intelligent Investment Research Assistant - [Python | Agentic AI | Multi-Agent Systems | OpenAI SDK | Async Workflows | Prompt Engineering]

- Designed and built an autonomous, multi-agent investment research system that identifies trending companies, performs deep financial analysis, and delivers personalized investment recommendations.
- Implemented intelligent company discovery pipelines to analyze market news, earnings reports, and sector trends while ensuring non-repetitive, unbiased selections.
- Developed deep financial analysis workflows evaluating fundamentals, financial ratios, competitive positioning, management quality, growth potential, and risk factors.
- Engineered a deep financial analysis workflow combining quantitative and qualitative criteria, providing transparent rationale for top picks and exclusion decisions.
- Orchestrated 7 specialized AI agents with sequential task execution and context passing to ensure coherent analysis across discovery, evaluation, and recommendation stages.
- Automated multi-channel reporting, delivering executive-style email summaries and real-time mobile notifications via PushOver with consistent messaging.

Certifications

-

Education

Aug 2017 – July 2021

Visvesvaraya Technological University, Belagavi - Bachelor of Engineering (Computer Science & Engineering)