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Top Skills

Retrieval-Augmented Generation
(RAG)
Semantic Search
FastAPI

Languages

Hindi (Native or Bilingual)
English (Professional Working)

Certifications

Tableau Essential Training
Microsoft Power BI - The Practical
Guide [2023 EDITION]
Data Visualization with Tableau
Specialization
Excel Skills for Business
Specialization
Google Data Analytics Specialization

Siddharth Singh

Researcher at Tata Consultancy Services
Bangalore Rural, Karnataka, India

Summary

I am a technology researcher and problem-solver, passionate about
building scalable, intelligent, and user-friendly solutions. My current
work focuses on Agentic AI applications, where I combine LLMs,
semantic search, and FastAPI/Django/AngularJS to develop systems
that let users query their documents through smart, context-aware
chat interfaces.

Earlier, I contributed to the Patent Analytics Tool (PAT) — a
software solution that helps organizations extract insights from large
volumes of patent data to guide R&D strategy, identify emerging
trends, and strengthen Intellectual Property (IP) management. PAT
streamlines patent searches, recommends relevant classifications,
and generates strategic reports, enabling businesses to assess
competition and uncover opportunities for innovation. My role
involved enhancing features, improving performance, and ensuring
security and compliance to make the tool both reliable and user-
friendly.

Before that, I worked in IT infrastructure monitoring and analytics,
creating dashboards and automations that transformed hours of
manual analysis into minutes, delivering clear insights for clients like
Starbucks.

Experience

Tata Consultancy Services
4 years 1 month

Researcher
May 2024 - Present (1 year 4 months)
Bengaluru, Karnataka, India

As a Researcher, I work on designing and developing intelligent software
solutions that leverage AI, data, and scalable architectures to solve complex
business problems.

Current Work – Agentic AI Application

1. Developing an Agentic AI application that integrates Large Language Models (LLMs) with a custom semantic knowledge engine.
2. The application allows users to upload documents and query them through a chatbot interface. Instead of sending entire files to the LLM, we perform parsing, chunking, and indexing, then use cosine similarity searches to fetch the most relevant knowledge before passing it to the LLM.
3. Built using FastAPI, Django, and AngularJS, ensuring a scalable backend, a secure workflow, and an intuitive user experience.
4. Exploring advancements in semantic search, embeddings, and retrieval-augmented generation (RAG) to improve accuracy and efficiency.

Previous Work – Patent Analytics Tool (PAT)

1. Contributed to the development of the Patent Analytics Tool (PAT) — a solution that helps organizations analyse large volumes of patent data to guide R&D strategy, IP protection, and competitive intelligence.
2. Enhanced features for patent search, classification recommendations, and strategic reporting to support decision-making in identifying trends, assessing competition, and uncovering innovation opportunities.
3. Ensured performance, compliance, and security through bug fixes, deployment management, and IP Safe Assessments.
4. Authored user guides and architecture documentation to support adoption and knowledge transfer across teams.

System Engineer
December 2021 - May 2024 (2 years 6 months)
Bengaluru, Karnataka, India

* Handling Infrastructure Monitoring Operations using SolarWinds & NewRelic, collaborating with other teams to perform backup activities.
* Spearheaded a transformative project for a leading retail client, addressing the challenge of Analyzing over 65,000 monthly alerts to enhance IT operational efficiency.
* Utilized advanced data analytics skills to identify appropriate Business Intelligence (BI) tools, leading to the selection and implementation of Power BI for streamlined analysis.
* Developed a localized data repository and seamlessly integrated it into Power BI, eliminating manual data-cleaning processes and reducing analysis time from 8-9 hours to under 15 minutes.

* Designed intuitive dashboards and visualization techniques to transform raw data into actionable insights, providing immediate access to critical information for informed decision-making.
* Led efforts to ensure data accuracy, integrity, and technical feasibility during the integration process, resulting in stabilized IT infrastructure and enhanced operational reliability.
* Created a comprehensive dashboard for Starbucks operations highlighting key metrics such as regional performance, store analysis, types of alerts received, and trends in overall store operations stability.
* Developed the dashboard independently, utilizing Power BI to integrate and visualize data despite limited visibility into the alert console (Datadog).
* Proactively identified future expansion opportunities in Starbucks operations, providing valuable insights for strategic growth initiatives beyond current business unit operations.
* Demonstrated strategic thinking and innovative use of Power BI to provide actionable insights for enhancing operational efficiency and supporting overall business growth objectives.

Assistant System Engineer - Trainee
August 2021 - November 2021 (4 months)
Bengaluru, Karnataka, India

Handling Infrastructure Monitoring Operations using SolarWinds, collaborating with other teams to perform backup activities.

Education

Sapthagiri College of Engineering, BANGALORE
Bachelor of Engineering - BE, Computer Science · (2017 - 2021)

HAPPY MODEL SCHOOL, Chittupur, Varanasi
Senior Secondary (XII), Maths · (2016 - 2017)

HAPPY MODEL SCHOOL, Chittupur, Varanasi
Secondary (X), Science · (2014 - 2015)