

# Avinash Thakur

Senior Software Developer

Mobile: 9501210969

E-mail: [avinashthakur737493@gmail.com](mailto:avinashthakur737493@gmail.com)

LinkedIn: <https://www.linkedin.com/in/avinash-kumar-thakur>

Dedicated and experienced professional with over 8 years of expertise in Generative AI, Machine Learning, and Natural Language Processing seeking opportunities to leverage skills in solving complex problems and contributing to innovative projects in AI-driven environments.

## EXPERIENCE

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**Data science Specialist, LTIMindtree, India**

**Oct 2024 – Present**

**Project: CanvasAI – Agentic Chatbot and RAG Framework**

Working on the development of advanced Agentic AI-based chatbot systems and Retrieval-Augmented Generation (RAG) frameworks.

**Key Responsibilities and Achievements:**

- Contributed to the CanvasAI project, a versatile framework designed to simplify the creation of LangGraph-based agents.
- Developed reusable components enabling users to define and launch various agent types such as ReAct agents, Supervisor agents, and Network agents, each equipped with customized tools and workflows.
- Designed modular logic that supports both use case-specific agents and general-purpose multi-agent orchestration.
- Ensured seamless integration with multiple LLM providers and enhanced the framework's flexibility for tool-augmented reasoning and agent coordination.

**Senior Software Developer, Firstsource Solutions, RPSG, Hyderabad, India**

**Dec 21 – Oct 2024**

**Project: Generative AI-Based Entity Extractor:**

As part of a collaborative team effort, spearheaded the development and deployment of a cutting-edge Generative AI-based Entity Extractor service. Leveraging advanced techniques such as Retrieval Augmented Generation, Langchain, and Azure cloud resources, the project aimed to provide clients with a robust solution for extracting entities from unstructured text data.

**Key Responsibilities and Achievements:**

- Led the design and implementation of the entity extraction pipeline, utilizing Generative AI algorithms to enhance the accuracy and efficiency of the extraction process.
- Integrated state-of-the-art retrieval mechanisms to augment the generation process, enabling the system to retrieve relevant context and improve the quality of extracted entities.
- Collaborated closely with Azure cloud experts to architect a scalable and reliable infrastructure for hosting the entity extractor service, ensuring optimal performance and availability for clients.
- Developed an API for seamless integration with clients' user interfaces, allowing them to effortlessly incorporate the entity extraction functionality into their applications and workflows.
- Conducted thorough testing and validation of the system to ensure accuracy, reliability, and adherence to client requirements and industry standards.
- Provided ongoing support and maintenance for the deployed service, addressing any issues or enhancements requested by clients and stakeholders.

### **Project: Generative AI-Based Cognitive Search**

Led the development and deployment of a state-of-the-art Generative AI-based Cognitive Search service aimed at providing intuitive search capabilities within a client-provided corpus of documents. Utilizing Langchain and Generative AI technologies, the project facilitated efficient retrieval of relevant information in response to user queries, enhancing information discovery and accessibility for clients

#### **Key Responsibilities and Achievements:**

- Conceptualized and designed the architecture for the Generative AI-based Cognitive Search service, leveraging Langchain technology to generate contextually relevant responses within the client's document corpus.
- Collaborated closely with the client to understand their specific requirements and customize the search service to effectively meet their needs and objectives.
- Implemented advanced algorithms for document indexing, semantic understanding, and query processing, ensuring accurate and efficient retrieval of information from the corpus.
- Deployed the Cognitive Search service on the Azure cloud platform as an API, providing clients with seamless access to the search functionality through integration with their user interfaces.
- Conducted extensive testing and optimization of the search algorithms to enhance performance, scalability, and relevance of search results.
- Provided training and documentation for clients on how to effectively use and integrate the Cognitive Search service into their existing workflows and applications.

### **Project: Generative AI based Email Automation**

Led the development and deployment of a sophisticated Generative AI-based email automation solution aimed at streamlining communication processes and enhancing productivity. The project involved analysing client emails and replies to create a tailored automation system that leveraged Generative AI technology for intelligent response generation

#### **Key Responsibilities and Achievements:**

- Spearheaded the analysis of client emails and replies to identify patterns, recurring queries, and common responses, laying the foundation for the development of the email automation solution.
- Collaborated with data scientists and machine learning engineers to design and train Generative AI models capable of generating contextually relevant responses to incoming emails.
- Developed a scalable and efficient email processing pipeline using AWS cloud resources, ensuring high availability and reliability of the automation system.

**Associate, Cognizant Technology Solutions, Hyderabad, India**

**Nov 17 - Dec 21**

#### **Name Entity Extraction:**

- Developed a tool for upload own data do annotation and do custom training using different libraries like flair, spacy, rasa.
- Developed a NLP based tools to extract the intents and entities from the mails.
- Developed solutions for extracting intents and entities using AWS Comprehend Key Achievements.
- The solution helped client to automate and speed up some manual efforts.
- Customers were able to train and deploy models and integrate.

#### **Image Processing:**

- Developed a tool to extract the hand written characters from the forms within constraints.
- Part of data preprocessing and data Augmentation.
- Developed tool for marking the start and end coordinates of field in forms

#### **Key Achievements:**

- The solution was used by multiple customers for extracting multiple fields from different forms.

**Aws Infra Setup Automation:**

- Developed tool launch new AWS ec2 instances and configuration and installation of software use by RPA tools
- Developed Solutions to automate process of taking data backup form database and upload it to s3 bucket

**SKILLS**

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- Langgraph ,Langchain , Genai
  - Languages: Python, Shell Script, Powershell, SQL.
  - Cloud: Azure Cloud, AWS
  - LLM Models: Chatgpt , Cohere, Claude
  - DL/ML Tools :Pandas, NumPy, Matplotlib, Seaborn, NLTK, Spacy.
  - Databases: MySql, Psql, MongoDB
  - Other Tools: Flask ,Docker, Git