Karthick Thirumalai

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Education

DePaul University - College of Computing and Digital Media **Expected Aug 2027**
Master's in Artificial Intelligence *Chicago, Illinois, USA*

SRM Institute of Science and Technology **July 2019 – Jun 2023**
Bachelor of Technology in Electronics and Communication ; CGPA:9.10 *Chennai, Tamil Nadu, India*

Skills

- **Technical**: SLMs, RAG, Generative AI, Machine Learning, API, AWS, Data Warehousing, Business Intelligence
- **Tools**: Crew AI, Llama Index, AWS Bedrock, Snowflake, Power BI, MicroStrategy, Jupyter Notebook
- **Coding Languages**: Python, SQL, C / C++, Shell Scripting, Linux

Experience

Sciera **Jan 2024 – Jun 2025**
AI/ML Engineer *Chennai , Tamil Nadu, India*

- Collaborated with USCC client to predict line additions and business patterns, informing future strategic decisions and deploying a cutting-edge generative AI technique for enhanced forecasting
- Led the "BookStack AI" project, designing and deploying RAG-based data pipelines to securely ingest data from external resources and bring it under the control of large language models (LLMs).
- Effectively used Snowflake to aggregate OLTP data and streamline ETL tasks.

Infocepts **Feb 2023 – Sep 2023**
Data Analyst *Nagpur, Maharashtra, India*

- Engineered and deployed a comprehensive Power BI dashboard for a Nielsen IQ client, significantly enhancing their data visualization and analytics capabilities to drive better business decisions.
- Managed Snowflake data warehouses for both OLTP and OLAP systems, successfully overseeing and optimizing ELT/ETL pipelines to ensure efficient daily data processing.
- Leveraged advanced SQL techniques to implement robust data quality checks and maintain integrity, ensuring accurate data validation and reliability across the data warehouse.

High Radius **Jan 2022 – April 2022**
Product and Engineering Internship *Remote*

- Developed and deployed an end-to-end AI-enabled FinTech B2B application, successfully building a payment date prediction model and designing the full backend framework and user interface (HTML/CSS).
- Optimized global collections and minimized financial risk by automating dunning strategies. Leveraged the AI model to prioritize high-risk customers daily, generating region-specific worklists that significantly streamlined collector operations worldwide.

Bharat Sanchar Nigam Limited - Govt of India **Feb 2021 – Mar 2021**
In-Plant Trainee *Chennai, Tamil Nadu, India*

- Analyzed BSNL's ISP operations to gain practical understanding of network infrastructure and the functionality of the OSI model.
- Developed foundational insights into internet connectivity, telecommunications, and the core operational aspects of enterprise-level network services.

Projects

1. Supremacy AI | Mixture of Agents   *Currently Under Development*

- **Architecting a cutting-edge B2C AI Agent System** designed for enterprise use cases, featuring a proprietary multi-step prompt chaining process to achieve an estimated **95% reduction in model hallucinations**.
- Integrating a **self-reinforcement learning tool** to ensure continuous model accuracy and adaptability, enabling the AI to learn from errors and maintain reliability across diverse business domains.

2. Medi-Wise Analytics | Advanced RAG   *Currently Under Development*

- **Pioneered the development of "Medi-Wise Analytics," a hallucination-free Doctor AI application** designed to provide patients with clear, accurate, and laymen explanations of their symptoms, root causes, and health conditions.
- Architected using a **Hybrid RAG Structure** to eliminate inaccuracies, featuring an advanced **Super Control** mechanism that provides granular oversight of all Large Language Model (LLM) actions for safe, reliable deployment in the medical domain.
- Integrated critical diagnostic support features, including condition **severity** analysis and the recommendation of necessary confirmatory **lab tests**.

3. AI-Driven Automation of RFP Responses Using Hybrid RAG and Agentic AI   **August 2023**

- **Engineered an end-to-end Hybrid Agentic RAG System** to automate the Request for Proposal (RFP) response process, significantly **reducing manual effort** and **accelerating response time**.
- Implemented a structured four-stage pipeline—including data preprocessing, **Agentic Chunking**, and vector embedding , culminating in hybrid retrieval that combines **keyword and semantic search** for guaranteed contextually accurate and comprehensive responses.

4. Adventure Works Sales Analysis Dashboard | *Power BI*   **August 2023**

- Developed a comprehensive **Sales Analytics Dashboard** for Adventure Works, featuring key sections on sales trends, sub-category deep dives, and product insights, significantly **enhancing data clarity for stakeholders**.

Certifications

1. Microsoft Certified - Azure Fundamentals   **Microsoft**
Marcg, 2025

2. AWS Certified Solutions Architect   **AWS**
February , 2025

3. AWS Certified AI Practitioner - Early Adopter   **AWS**
October ,2024

4. DBT Fundamentals   **DBT**
June ,2024

5. AWS Certified Cloud Practitioner   **AWS**
February ,2024

6. Microsoft Certified Power BI Data Analyst Associate (PL-300)   **Microsoft**
August, 2023

7. SQL - Basic and Intermediate   **HackerRank**
March, 2023

All project titles are hyperlinked to their respective **GitHub repositories** or **live demos**.