

# MUNISH PATEL

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## EDUCATION

### Illinois Institute of Technology, Chicago, USA

Aug 2023 - May 2025

Master of Science (M.S), Computer Science, GPA: 3.8

**Coursework:** Machine Learning, Data Preparation and Analysis, Advanced Database Organization, Science of Programming, Big Data Technology

### SRM Institute of Science and Technology, Chennai, India

June 2018 - May 2022

Bachelor of Technology (B.Tech), Computer Science, GPA: 3.9

**Coursework:** Data Structures and Algorithms, Artificial Intelligence, Object Oriented Design, Programming for Problem Solving, Databases

## TECHNICAL SKILLS

**Programming:** Python, SQL, R Programming, C++, HTML, CSS, Bash, DAX

**Frameworks and Libraries:** Streamlit, TensorFlow, Pytorch, Scikit-Learn, Pandas, Numpy, PySpark, XGBoost, OpenCV, FastAPI, Flask

**AI:** LLM based Transformers, NLP, OpenAI API, LangChain, AutoGen, Claude Code, LlamaIndex, RAG, Hugging Face

**Cloud and DevOps:** AWS(S3, EC2, Lambda, SageMaker), GCP, BigQuery, Docker, Kubernetes, ElasticSearch, IndexedDB

**Tools:** PowerBI, MySQL, Github, Terraform, Git, Visual Studio Code, Jupyter Notebook, Hadoop

## EXPERIENCE

### Open Learning Exchange INC, Cambridge, USA

March 2025 - May 2025

(Data Engineer and AI Intern)

- Leveraged **OpenAI API** to build AI assistant for edtech platform, achieving a **35%** improvement in accuracy via prompt fine tuning.
- Designed knowledge interface RAG model using **LangChain** adopted by over **5,000** students for conversational AI and document processing.
- Enhanced development system stability by resolving **30+** critical bugs and performance issues across large **GitHub** codebases.

### Open Avenue Foundation, New York, USA

Nov 2024 - Feb 2025

(Build Student Consultant, Software Developer)

- Developed local-first web application integrating real-time, collaborative features using **embeddings**, **elastic search** and **CRDT framework**.
- Processed travel data using **MS Excel** and built **PowerBI** dashboard focusing on sync-first design with **30%** faster data synchronization.
- Delivered collaborative **recommendation algorithm** for AI-powered trip planner (**CollabGetaway**) enhancing trip planning by **18%**.

### Tata Consultancy Services, Hyderabad, India

July 2022 - July 2023

(Associate Developer)

- Collaborated on Verizon's customer experience platform, leading to **28%** increase in timely payments and **10%** boost in customer satisfaction.
- Led development of Payment Date Prediction model, conducted detailed analysis of financial roadmap using **Python** and **SQL**.
- Migrated legacy reporting systems to **BigQuery**, driving **20%** business growth through enhanced analytics and improved data accuracy.

## ACHIEVEMENTS

- Winner of **ScarletHacks 2025 (ACM IIT)** – **Best Use of AI/ML**, recognized for impactful application in real-world context.
- Earned **2nd place at HackWithChicago hosted by Microsoft**, standing out among **25+** teams for innovative problem-solving.
- Recognized among the **Top 10 teams at Global Hack Week 2025** for excellence in system architecture and cross-functional teamwork.

## PROJECTS

### DoctR.AI : Real-Time Clinical Decision Support System ([Link](#))

- | Python, React.js, LangChain, OpenAI API
- Implemented a **RAG**-powered real-time system for answering clinical decision related questions including vitals, emergency alerts, and lab reports achieving **4x** faster clinical decision-making through custom-trained LLM.
  - Engineered an intelligent multi-agent chatbot integrated into a React application with custom embedding optimization for patient logging, medical contexts and doctor-patient interaction.

### FarmR.AI : Multi-Agent AI Orchestration Platform ([Link](#))

- | Python, OpenCV, UNet, LangGraph, React Native, OpenAI API, Node.js
- Developed Model Context Protocol (**MCP**)-aligned architecture to deliver real-time precision agriculture insights using custom-**ML** models to analyze crop health, water usage and pesticide application.
  - Designed and implemented a state-driven workflow orchestrator with **LangGraph**, effectively routing vectorized queries across various data sources to specialized farming agents to continuously update the application using intelligent support.

### The Next Step : Career Prediction System ([Link](#))

- | ElasticNet, Python, NumPy, Sklearn, Seaborn, Streamlit, MS Excel, PowerBI
- Leveraged MS Excel for data wrangling, comprehensive data filtering and **PowerBI** for in-depth dashboard analysis, deriving key insights.
  - Developed a machine learning model for students, enhancing the best-fit career options using **L1 regularization** and **L2 regularization** along with **gradient boosting** in multi-collinearity data for accurate recommendations.

### Cloud Mart ([Link](#))

- Architected multi-cloud DevOps solution using **AWS (Terraform, DynamoDB, Docker, Kubernetes)** and **Google Cloud (BigQuery)**, automating CI/CD pipelines to streamline operations and ensure scalable infrastructure.
- Integrated **AI agents** (Claude 3 Sonnet via **AWS Bedrock, GPT-4** via OpenAI API) to enhance customer support experience.

## CERTIFICATIONS

- Google Data Analytics Professional (Coursera)
- LangChain - develop LLM powered applications (Coursera)

## PUBLICATIONS

- Automated decision-making Medical Devices such that they are “concerned” in Healthcare, 2024, s10111-020-00657-6
- Comparative analysis of Supervised Learning with electronic health records for COPD, 2022, ISBN : 978-1-6654-5342-4
- A categorization approach PDP for enhanced Accounts Receivable Management, 2022, ISBN: 979-8-3503-9447-4