

VISHVANATH MADASAMY

Software Engineer | Data Engineering & Analytics | AI & Agentic Workflows

✉ vishvanathmadasamyofficial@gmail.com | ☎ (774) 524-1133 | 📍 New Bedford, MA | Willing to Relocate: Austin, TX / Fremont, CA
| [linkedin.com/in/vishvanath-madasamy](https://www.linkedin.com/in/vishvanath-madasamy) | [Portfolio](#)

PROFESSIONAL SUMMARY

Full-stack Software Engineer specializing in data engineering, analytics platforms, and AI agentic workflows — with hands-on experience building backend APIs, ReactJS UIs, database systems, and LLM-powered intelligent pipelines. I am proficient in Python, ReactJS, MySQL, PostgreSQL, NoSQL, OpenSearch, Docker, Kubernetes, d3.js charting, and microservices architecture. Experienced in designing scalable self-service analytics tools and deploying production-grade AI solutions that transform complex data into actionable business intelligence. AWS Certified AI Practitioner (AIF-01) & Cloud Practitioner (CLF-02). MS Data Science, GPA 3.778/4.0. OPT-eligible May 2026 — willing to relocate to Austin, TX or Fremont, CA.

TECHNICAL SKILLS

Languages & Frameworks: Python, JavaScript, ReactJS, Java, SQL, C, HTML, CSS — performant coding patterns & scalable software architecture

Backend & APIs: FastAPI, Flask, REST APIs, Microservices architecture, Authentication/Authorization services, API integration, CI/CD pipelines

Databases: MySQL, PostgreSQL, NoSQL (MongoDB), OpenSearch, SQL Server (SSMS), Apache Spark, Hadoop, Hive — schema design, ETL, query optimization

AI & Agentic Workflows: LLMs (GPT-4, Amazon Bedrock, Claude), LangChain, Rasa NLU, PyTorch, Scikit-learn, XGBoost, NLP pipelines, AI-driven analytics automation

Visualization & Orchestration: d3.js, Power BI, Tableau, QuickSight — drill-down charting, interactive dashboards, Airflow data orchestration, self-service BI

DevOps & Cloud: Docker, Kubernetes, Git, AWS (EC2, S3, SageMaker, Lambda, Glue), Azure (Data Factory, Databricks), GCP, Ansible, Chef, Redfish/IPMI

CERTIFICATIONS

AWS Certified AI Practitioner (AIF-01) (Amazon Web Services)

Active: Mar 2026 – Mar 2029

AWS Certified Cloud Practitioner (CLF-02) (Amazon Web Services)

Active: Mar 2026 – Mar 2029

Microsoft Azure Fundamentals (AZ-900)

In Progress / Pursuing

WORK EXPERIENCE

University of Massachusetts Dartmouth

North Dartmouth, MA

Information Systems Development & Integration Assistant / IT Systems Analyst

Sep 2025 – Present

- Designed and developed backend APIs and data pipeline components using Python and microservices architecture — integrating enterprise systems (INFOR POS, UMass Pass, Lenel OnGuard) enabling real-time data access for operational analytics across a 10,000+ user environment.
- Built AI agentic workflows using LLM orchestration (Amazon Bedrock, GPT-4) and LangChain — developed the Log Analyzer tool (Python + PowerShell) to automate log parsing, ML-based anomaly detection, and d3-style geolocation visualization of security threats across the network.
- Developed ReactJS-based UI components for internal analytics dashboards — implementing intuitive data rendering, drill-down charting, and interactive visualizations enabling self-service business intelligence for non-technical stakeholders.
- Containerized and deployed applications using Docker and Kubernetes — managing CI/CD pipelines, Ansible/Chef configuration management, and automated testing workflows ensuring reliable, scalable production deployments.
- Administered MySQL, PostgreSQL, NoSQL (MongoDB), and OpenSearch database systems — designing schemas, optimizing queries, and building ETL pipelines enabling real-time analytics and reporting platform functionality.
- Collaborated with architects to define AI/analytics roadmap and drove Cursor AI adoption across development workflows owing full POC-to-production lifecycle and guiding team members on best practices.

Value IBMS Pvt Ltd.

Chennai, India

Data Analyst

Oct 2023 – Dec 2023

- Architected and deployed a production-grade Python + SQL Server ETL pipeline on cloud infrastructure — automating end-to-end data ingestion, transformation, and loading workflows that reduced data processing time by 45% and unlocked real-time analytics for business teams.
- Built interactive Power BI and Tableau KPI dashboards with drill-down analytics, ML-based trend forecasting, and Excel/CSV automated reporting — delivering actionable business intelligence that directly drove a 30% increase in product sales.
- Designed microservice-based data ingestion workflows integrating REST APIs with SQL Server backend — enabling real-time reporting pipelines and self-service analytics for cross-functional business stakeholders.
- Applied Python (Pandas, NumPy) and Machine Learning models for data cleaning, preprocessing, and predictive analysis — improving data quality and enabling proactive decision-making across sales and operations teams.

Value IBMS Pvt Ltd.

Chennai, India

IT Systems Analyst

Jul 2023 – Aug 2023

- Deployed automated ML-based monitoring and analytics solution for Pune Metro CPM infrastructure — achieving 37% improvement in building management system efficiency through intelligent data-driven alerting and visualization.
- Designed and deployed an automated ML-based monitoring and analytics solution for the Chiller Plant Manager (CPM) project at Pune Metro Station — integrating IoT sensor data streams with Python automation scripts to achieve a 37% improvement in building management system efficiency.
- Built Python automation scripts for real-time IoT data ingestion, SQL-based query optimization, and automated report generation — eliminating manual monitoring processes and reducing response time to infrastructure anomalies.
- Performed end-to-end data pipeline work including IoT sensor data collection, cleaning, transformation, and visualization — ensuring high-quality, reliable data for engineering and operations decision-making.

KEY PROJECTS

AI-Powered Medical Image Analysis Platform | Python, Next.js, ReactJS, Google Cloud | [GitHub](#)

Oct 2025

- Built a full-stack production-grade AI analytics platform with ReactJS frontend, Python backend APIs, LLM-powered inference pipeline, and GCP cloud deployment — demonstrating end-to-end data engineering, agentic AI, and scalable cloud architecture capability.

Boston Library Checkout Trends Analytics | Node.js, Python, SQL, AWS S3, Glue, Athena, Redshift, Lambda, QuickSight

- Engineered a fully serverless AWS cloud platform pipeline — ingesting 53 MB of CSV data into S3, orchestrating Spark ETL jobs via AWS Glue to produce partitioned Parquet tables, querying via Athena, and delivering QuickSight dashboards that visualized peak checkout hours and usage patterns.
- Designed SQL data models and transformations in Python — normalizing schemas, parsing timestamps, and deduplicating records to produce clean, query-optimized datasets; demonstrated proficiency with both SQL (Athena/Redshift) and NoSQL data paradigms.

Global Microplastics Network Visualization | Python, d3.js, Visual Analytics | [GitHub](#)

May 2025

- Developed an interactive d3.js network visualization system enabling clickable node-based exploration of worldwide microplastic pollution data — implementing drill-down analytics, geographic concentration statistics, and real-time data rendering for scientific decision-making.

Car Rental Management System | Python, ReactJS, HTML/CSS, MySQL, SSMS | Database Design Coursework | [GitHub](#)

May 2025

- Designed and developed a full-stack system with Python backend, ReactJS/HTML/CSS frontend, and MySQL/SSMS database — implementing CRUD operations, real-time availability querying, dynamic pricing logic, and an admin analytics dashboard for fleet management.

Library Assistant Chatbot — Conversational AI | Python, Rasa NLU, Flask, REST API | [GitHub](#)

Jul 2024

- Designed and deployed an NLP agentic chatbot using Rasa NLU and Flask REST API — implementing intent classification, entity recognition, dialogue management, and webhook integration for fully automated self-service support workflows.

EDUCATION

Master of Science in Data Science | GPA: 3.778 / 4.0

Aug 2024 – May 2026

University of Massachusetts Dartmouth — North Dartmouth, MA

Coursework: AI, Advanced ML, Database Design, Network Security, High Performance Scientific Computation, Data Mining, Statistical Analysis, Data Visualization

Bachelor of Engineering — Electronics & Communication Engineering | GPA: 8.65 / 10

Jul 2020 – Apr 2024

Anna University — Chennai, India

Best Undergraduate Final Project Award 2024 — ML-based automated image detection system