ABILASH SIVAKUMAR
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SUMMARY

Builder of intelligent AI ecosystems with 6+ years sculpting machine learning, NLP, and Generative AI into scalable, real-world systems. Architect of bespoke LLM-powered solutions, fluent in leveraging OpenAI integrations, fine-tuned prompt frameworks, and retrieval-augmented generation pipelines. Expertise spans vector similarity search, embedding-driven knowledge retrieval, and dynamic data stream engineering using Python, SQL, LangChain, and multi-cloud platforms. Adept at translating chaotic, unstructured information into self-evolving, decision-ready intelligence engines that drive real-world impact.

EDUCATION

MS Business Analytics; University of Illinois Chicago, **Chicago, USA**; GPA: 3.95   **May 2025**
B.E. Mechanical Engineering; Anna University, **Chennai, India**; GPA: 8.28   **May 2021**

EXPERIENCE

CCC Intelligent Solutions Inc   **Chicago, USA**
AI/ML Engineer – Capstone (UIC)   **Jan 2025 – Present**
- Developed an AI-powered multi-agent system to extract vehicle specifications and pricing from 30+ OEM websites for post-accident valuation using NLP, web scraping, and prompt chaining.
- Built a full-stack solution with a Node.js front end and Python backend, integrating OpenAI GPT-4o for query classification, intelligent search, and markdown-based summarization.
- Designed asynchronous scraping agents using Playwright and BeautifulSoup, handling dynamic content, multi-hop navigation, and structured data extraction at scale.
- Created ETL pipelines to clean and normalize HTML into tabular formats using Pandas and regex, enabling CSV downloads of key specs like MSRP, GVWR, and engine type.
- Implemented a custom Python workflow engine replacing LangGraph, with support for modular agent orchestration and end-to-end traceability.
- Integrated Arize Phoenix for workflow observability, achieving sub-1.5 minute response times and boosting transparency across model stages and error handling.

University of Illinois Chicago   **Chicago, USA**
Graduate Teaching Assistant – Accounting for Analytics   **Oct 2023 - Present**
- Mentored 150+ students in applying Excel, Tableau, and Power BI to solve accounting-focused problems involving cost analysis, budgeting, and financial reporting.
- Conducted data analysis on course enrollment trends using SQL and Excel, identifying seasonal demand fluctuations and informing department-wide curriculum adjustments.
- Built interactive dashboards to visualize KPIs such as seat fill rates, student load, and registration flow, enabling data-driven scheduling and resource optimization.
- Designed and maintained a relational database to store course-level and student registration data, implementing data cleaning, transformation, and scheduled ETL pipelines for consistent reporting.
- Collaborated with a faculty mentor to scrape and structure earnings call transcripts of U.S. public companies, creating a text corpus and document-level metadata store for advanced analytics.
- Applied NLP techniques (TF-IDF, sentiment analysis, topic modeling) to extract insights on executive tone, market confidence, and industry narratives, supporting research on financial communication.

Cognizant Technology Solutions Pvt. Ltd. (Client: Farmers Insurance – USA)   **Coimbatore, India**
Programmer Analyst   **Sep 2021 - Jul 2023**
- Supported the Policy Data Management team for Farmers Insurance, delivering scalable data solutions on Oracle RDBMS to support reporting, compliance, and operational analytics.
- Spearheaded ETL pipeline development using Informatica PowerCenter to automate policy and claims data processing, minimizing revenue leakage through robust source-to-target validation.
- Collaborated with business analysts, QA teams, and DBAs to gather requirements, resolve data discrepancies, and enhance system performance for high-volume policy systems.
- Optimized legacy Oracle SQL queries, significantly reducing batch runtimes by over 40%, improving throughput and ensuring SLA adherence for nightly production jobs.
- Designed data flow diagrams, business requirement documents, and test cases to support quality assurance, audits, and data governance initiatives.
- Conducted root cause analysis (RCA) and implemented controls to resolve data mismatches across staging and production layers, boosting trust in downstream reporting by 95%.
- Automated file ingestion workflows using Unix shell scripts and Autosys, reducing manual processing effort by 95% and ensuring hands-free execution in production environments.
- Managed project deliverables through Agile sprint boards in Jira, tracking user stories, defects, enhancements, and deployment timelines across distributed teams.

Business Intelligence Consultant – Jewelry Retail Analytics   **Madurai, India**
Founder of Wanderlust Promotions   **Dec 2018 - Aug 2021**

- Founded and led an analytics and marketing venture while pursuing academic studies, supporting over ten boutique jewelry retailers across South India with data analysis and branded content creation.
- Built interactive dashboards using Microsoft Excel, Google Sheets, and Tableau Public to track key marketing and sales metrics including customer acquisition cost, return on advertising spend, customer lifetime value, and regional conversion rates.
- Developed data processing scripts in Python using the Pandas and Requests libraries to automate the collection and cleaning of campaign performance data from Meta Ads Manager, Google Analytics, and Shopify export reports.
- Conducted A/B testing on creative assets and applied basic machine learning models such as K-Means clustering using the Scikit-learn library to identify customer segments based on purchase behavior and geography.
- Designed and edited professional visual content—including social media posters, short-form videos, and promotional reels—using Adobe Photoshop, Adobe Illustrator, and Adobe Premiere Pro, tailored for festive seasons and local language audiences.
- Collaborated with clients to build content calendars and execute digital campaigns by combining data insights with visual storytelling to increase audience engagement across Instagram and Facebook.
- Contributed to measurable business outcomes, including a threefold increase in social media followers, a 35% improvement in advertising engagement, and a significant boost in qualified leads and product inquiries.
- Managed a variety of responsibilities including stakeholder communication, data wrangling, marketing reporting, and content production—gaining hands-on experience in business intelligence, digital marketing, and client collaboration.

PROJECTS

Real-Time Smart Energy Management System   **Dec 2024**
Technologies: Apache Kafka, Databricks, PostgreSQL, Tableau

- Built real-time Kafka pipelines to stream 3M+ sensor and meter log records daily, enabling continuous monitoring and anomaly detection.
- Transformed and joined high-volume data in Databricks with PostgreSQL-backed storage for efficient analytics and KPI reporting.
- Created Tableau dashboards to visualize energy trends, cost metrics, and peak usage, maintaining sub-second latency during load spikes.

Automated Competitor Analysis   **Nov 2024**
Technologies: Python, Sentence Transformers (all-MiniLM-L6-v2), PyTorch, Dask, Flask, Figma

- Developed a scalable NLP pipeline to classify over 50,000 business news articles into SWOT categories using the all-MiniLM-L6-v2 transformer model for generating dense semantic embeddings.
- Implemented a cosine similarity–based matching algorithm to map contextual embeddings to predefined SWOT themes, enabling multi-label classification with high semantic accuracy.
- Built an interactive Flask application that allows users to input a keyword and retrieve context-aware SWOT summaries, powered by real-time embedding search and summarization logic.

HR Information System – Enterprise Data Integration Project   **Dec 2023**
Technologies: Informatica PowerCenter, Oracle, ETL, Data Warehousing

- Built ETL pipelines in Informatica PowerCenter to load and transform HR data from modules like payroll, attendance, training, and employee records into Oracle-based data marts.
- Modeled complex relationships across leave, performance, compliance, and benefits to support unified HR reporting and analytics.
- Improved data quality and reduced reporting errors by 35%, enabling more reliable insights on compensation, performance, and workforce engagement.

Airline competitor analysis (JetBlue vs United Airlines)   **Oct 2023**
Technologies: Tableau, Excel

- Conducted a comparative performance analysis between JetBlue and United Airlines using Tableau, focusing on metrics such as on-time arrivals, flight volume, and origin cities.
- Built interactive dashboards to visualize airline trends, delay patterns, and regional flight operations, enabling intuitive insight discovery.
- Formulated data-driven recommendations to improve JetBlue's operational efficiency and route performance based on historical aviation data.

SKILLS

Data Engineering & ETL: MySQL, Oracle RDBMS, SQL Server, NoSQL, Informatica PowerCenter, IICS, Talend, SSIS, Hadoop, Apache Spark, MLOps, Jira, Autosys, Cornerstone, Docker, Kubernetes, Enterprise data management
Data Analytics & BI: Tableau, Power BI, MS Excel, PowerPoint, SSAS, SSRS
Programming & Development: Python, SQL, Pandas, NumPy, Matplotlib, Git, Scikit-learn, Data warehousing, TensorFlow, PyTorch, MLFlow, Fullstack
Certifications: AZ-900 (Azure Fundamentals Exam)