Lakshmi Sravya Vedantham

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SUMMARY

Data scientist skilled in building modern data-driven solutions like predictive models and interactive dashboards. Focused on delivering clear, impactful insights using cutting-edge tools, guided by a spiritual perspective that brings clarity and purpose to analytics.

EXPERIENCE

Relocation & Immigration Transition

– **March 2025 - Present, San Jose, CA**

- Developed a multimodal brain activity analysis platform, applying specialized neural data processing tools (NeuroML, MNE-Python) on simulated brainwave data, and integrated a transformer model (DistilBERT) and image-text analysis (CLIP) for mood detection.
- Created a production-grade chatbot using the Retrieval-Augmented Generation pattern (LangChain) and a fine-tuned Large Language Model (Llama 3.1), leveraging vector search libraries (FAISS, Pinecone) for fast, context-aware responses.
- Deployed full-stack applications on Vercel with Next.js and FastAPI, setting up continuous monitoring via Prometheus and Grafana, and implementing the Flower framework to privately update models through a federated learning approach.
- Proactively utilized a 7-month work authorization waiting period (H4 EAD) during relocation for intensive, self-directed research and development into the latest Generative AI frameworks, machine learning operations, and brain activity modeling.

Sr. Data Modeling Engineer

Co-operators **October 2022 - February 2025, Toronto, Canada**

- Developed interactive applications using D3.js, Plotly, and Streamlit to deliver advanced data visualizations, enabling real-time reporting and intuitive navigation for cross-functional teams.
- Led modernization of legacy systems with microservices architecture using Docker and Kubernetes, incorporating streamlined UI/UX designs to enhance functionality and reduce manual operations.
- Built high-accuracy policy pricing models with TensorFlow, PyTorch, and scikit-learn, paired with statistical modeling in R, to drive predictive analytics on large-scale datasets.
- Optimized BAU processes through workflow automation, designing user-friendly dashboards with Streamlit, Tableau, and Power BI for data-driven decision-making.
- Mentored teams in building scalable, data-driven applications, leveraging Elasticsearch, Tableau, and Streamlit for dynamic visualization and real-time analytics.
- Implemented optimized dimensional data models, aligning source-to-target mapping for insurance policy and claims data to ensure data integrity and enhance reporting accuracy for business stakeholders.

Software Engineer

StackUp Technologies **October 2018 - June 2019, Chennai, India**

- Developed responsive React.js front-end applications and visualization dashboards, integrating with internal Flask APIs to deliver real-time performance metrics and statistics for client hardware and software products.
- Analyzed product usage data using Pandas and NumPy to assess performance and resource consumption, providing actionable insights that informed strategic planning for hardware and software development roadmaps.
- Maintained ETL pipelines and relational databases, ensuring data integrity and optimizing the data flow from source systems through to end-user visualization, supporting accurate reporting on product production and efficiency.

Software Development Engineer

Tata Consultancy Services **June 2015 - March 2018, Nagpur, India**

- Developed and optimized an internal employee social platform using AngularJS (v1.x), JavaScript (ES6), Spring Boot, and Selenium WebDriver, delivering high-performance RESTful APIs and dynamic UI components with robust testing using Chrome DevTools and Firebug for debugging.
- Led data-driven model development with AngularJS and Spring Framework, implementing custom directives and two-way data binding to optimize user experience, while integrating Hibernate for efficient database interactions with MySQL.
- Enhanced platform scalability and reduced latency by optimizing Java-based backend services with Spring MVC, utilizing caching (Ehcache) and profiling tools like VisualVM to improve throughput for internal tools.

EDUCATION

Masters in Data Analytics

Minor in Applied Machine Learning • Northeastern University • Toronto, CA • 2022 • 3.8

SKILLS

Technical Skills: Python, R, SQL, C++, Data Modeling, Elasticsearch, Grafana, Prometheus, Predictive Modeling, Business Intelligence, Data Governance