

SHASHIDHAR BABU P V D

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EDUCATION

San Jose State University, San Jose, CA

Masters in Applied Data Science, Minor in Data Engineering

August 2024 - May 2026

SKILLS

Machine Learning: TensorFlow, PyTorch, OpenCV, JAX, scikit-learn, LangChain, Crew AI, Hugging Face

LLMs: MCP, LangGraph, LangChain, LlamaIndex, ONNX, Llama.cpp, Crew AI, LoRA, SBERT, RAG, RLHF

Data Engineering: Tableau, Power BI, Matplotlib, Seaborn, Plotly, Hadoop, Spark, Airflow, Kafka, PySpark

Databases: PostgreSQL, SQL, MongoDB, Redshift, Pinecone, Snowflake, Databricks

Programming Languages: Python, Java, C, Go, R, DAX

Mathematics: Statistics, Multivariate Calculus, Regression, Optimizations, PCA, p-value, A/B Testing

EXPERIENCE

Machine Learning Intern, Mercedes Benz Research & Development North America

May 2025 - August 2025

- Authored and submitted **primary research paper** “Scalable Function Calling: A Hybrid Retrieval-Augmented Fine-Tuning Pipeline for In-Vehicle Assistants” to [BayLearn ML Conference 2025](#) and [SEA@NeurIPS 2025](#).
- Improved **Recall@1** from **76%** to **85%** for in-vehicle function calls by fine-tuning Llama-3.2-1B& Qwen-3 using A100's, PyTorch, Python) and built an evaluation toolkit (**25+** unit tests) for safety across **5+** car models.
- Worked on **VLM finetuning pipeline** using 2 A100's, Python, synthetic data(Claude) and **100k** dash-cam samples paired to fine-tune Liquid AI's LFM2-VL-450M VLM and added **2+ feedback loop checks** for AI Safety

Data Scientist, Techolution Pvt. Ltd

July 2023 - June 2024

- Improved the accuracy of AI Robotic Hand while executing Transfer Learning on YOLOv7 by **15 PP** to **96%**, with **PyTorch** and **TensorFlow**, adapting **10+** control algorithms on temperature, vision, proximity sensor datasets
- Reduced the pod crash rate by **97%** to improve Hypervisor stability for **RLEF.AI**, optimizing data pipelines, model training, and deployment using Python, Vertex AI, SQL, Docker, Kubernetes, and Pub/Sub Firebase triggers
- Built **RAG** pipelines(0 to 1) for top-k products based on SKUs, with a retrieval accuracy **92%** for **2+ clients** on Enterprise GPT using **RLHF**, RAG, Semantic Search, LLM, Prompt Engineering, Flask, GPT-3.5, Llama APIs

Data Scientist, Perspect.ai

August 2022 - June 2023

- Reduced video interview errors by **40%** for real-time inspection by developing an AI-powered Video Interview Dashboard using ResNet for video quality prediction AWS Lambda, AWS S3, FastAPI, Javascript and JQuery
- Improved candidate-competency mapping from **67%** to **91%** for recruitment by leveraging ensemble learning with LDA and K-Means algorithms for processing **1M+** records/day, using PyTorch, TensorFlow, and AWS Sagemaker
- Developed **2+** psychometric games that evaluates numerical reasoning and risk-taking competencies, using Markov Decision Process for decision modeling, Reinforcement Learning and Scikit-learn

Machine Learning and Robotics Intern, Segritech.ai

May 2022 - August 2022

- Decreased the sorting error rate by **30%** for a Fruit/Vegetable Sorting AI Robot by engineering **3+** custom models based on VGG16, VGGNet, utilizing PyTorch, **OpenCV**, and TensorFlow for real-time fault detection
- Developed a parallel fruit and vegetable segregation system using 5+ models using TensorFlow and Objective-C, improving apple grading criteria in real-time, on Raspberry PI and Arduino UNO Rev3

Machine Learning Intern, FeyNN Labs Pvt. Ltd.

December 2021 - February 2022

- Led a team of **5+** interns to build a Mask R-CNN based ensemble model for verifying the authenticity of candidate documents, using TensorFlow, OpenCV, reducing onboarding delays to less than **30 days**
- Ranked top-k candidates from **1M+** resumes using Market Segmentation Analysis with KNN and DBSCAN models from the client's server data, using FAISS, scikit-learn, pandas, and numpy, conducting **10+ A/B tests** for testing

PROJECTS

Enterprise Guardrails Application | *RLHF, RLAIF, SFT, Agents, NER*

August 2025 - Present

- Engineering an enterprise system that handles JailBreak and Prompt Injection using feedback loop techniques (**RLAIF + SFT**) and handles real-time PII redaction using DeBERTa **NER** model
- Architecting a multi-agent system orchestrating **4+ agents** and implementing 'Multi Agent Debate(MAD)' framework and Chain of Thought techniques to improve reasoning using **LangChain, Llama Instruct, Guard**

AI Nutrition Coach | *IBM Granite 3.0, LangChain, CrewAI, Gradio*

[Link](#)

- Deployed **4+ AI agents** on Gradio app using Llama 3.2 Vision, IBM Granite 3.0, GPT-4 to analyze images and generate personalized recipes, supporting multimodal data processing through **LangChain, CrewAI, and Flask**

Optimized Trading Scheduler | *SAC Algorithm, SageMaker, Stable Baselines, Flask*

[Link](#)

- Implemented Reinforcement Learning for Trading paper and achieved **14.3%** improvement over TWAP and **9.7%** over VWAP benchmarks by deploying **SAC algorithm** based minute-wise trading app. on AWS SageMaker

LEADERSHIP

Head of Data and Human Resources | *The Bright Side Foundation*

March 2021 - Present

- Led the recruitment and onboarding of **500+ members**, managed **5+** COVID-19 mental health projects, and organized **Udaan -India's Biggest Mental Health Festival 3+** times for **10,000+** attendees

ACHIEVEMENTS

Google Scholar | *Google - Product Equity & Inclusivity Summit 2025*

April 2025

- Chosen as **1 of 50** delegates from **10,000+ applicants** and invited to **Google HQ** for a 3-day summit to build inclusive AI and equitable tech products focusing on mental health and neurodivergence for Google products

3rd Place Winner | *Future of Agents Hackathon, San Francisco*

October 2025

- Won **3rd Place** and **Apify Recognition** at hackathon using **Apify, OpenAI, & Snowflake** for building **IRIS**, an agentic app. that creates an equitable, voice-first shopping experience for the visually impaired people.