SUBRAMANIYA SIVA T S

+1-517-730-7717 | tsubrama@msu.edu | LinkedIn | GitHub | Portfolio | Michigan, USA

SUMMARY

Master's graduate in **Data Science** from **Michigan State University** with **3 years of industry experience** in **Computer Vision, NLP, and LLMs**. Passionate about building scalable ML systems and applying cutting-edge research to real-world challenges.

EDUCATION

Michigan State University, USA | *MS in Data Science* **| *GPA: 4.0*** *August 2023 - April 2025*
Achievements: Won Techsmith award in SpartaHack among 600 participants

Indian Institute of Technology Roorkee (IITR), India | *B.Tech in Mechanical Engineering* *July 2016 - June 2020*
Achievements: Best B.Tech Project of the year 2020 award.

PROFESSIONAL EXPERIENCE

Inito Inc | *Data Science Engineer* *May 2021 - June 2023*

- Spearheaded end-to-end development, fine-tuning, and production deployment of 20+ deep learning models for image classification, object detection, and segmentation using Detectron2, MMDetection, and YOLOv8 — powering 1M+ diagnostic tests monthly.
- Architected and standardized the "Model Cascader" orchestration framework on GCP Vertex AI, enabling dynamic model selection in real time across distributed production environments and reducing false positives by 90% in the flagship diagnostic engine.
- Designed and deployed a Temporal Fusion Transformer pipeline to forecast ovulation cycles from multivariate hormone time series, boosting predictive accuracy by 30% and powering personalized user insights.
- Leveraged AlphaFold, a DL-based protein folding model, to bolster enzyme docking stability, amplifying prototyping efficiency by 5x.
- Crafted 20+ insightful Elastic dashboards for data-driven decision-making, facilitating informed strategic choices for stakeholders.
- Managed CI/CD workflows and version control for 10+ ML repositories; mentored a team of 4 Data Analysts, driving improvements in data preprocessing pipelines and analytical workflows to support robust model development.

Inito Inc | *Systems Engineer* *August 2020 - April 2021*

- Engineered an AI-powered UV hormone test-strip reader using YOLO and EfficientNet, achieving a 10× precision improvement over conventional methods.

Indian Institute of Science (IISc) | *Research Intern* *May 2019 - July 2019*

- Developed simulation pipelines and statistical models for composites, optimizing structural performance through data-driven insights.

PROJECTS

EduVision: LLM-Orchestrated Mindmaps & Manim Animations | MSU *January 2025 - April 2025*

- Developed an end-to-end LLM pipeline that ingests textbook text and images (captioned using LLAVA) and produces interactive Mermaid.js mindmaps rendered as SVG using a fine-tuned Mistral-7B model (4-bit qLoRA + RLHF).
- Automated Manim animations by orchestrating GPT-4o prompts to generate and iteratively debug stepwise scene scripts, auto-producing gTTS narration aligned to each segment, and stitching the rendered clips together into cohesive explainer videos.
- Packaged the workflow in a one-click Gradio app, enabling educators to convert raw content into mindmaps and animations. code

3D Object detection and Scene Reconstruction for Navigation | MSU **(Best Project)** *August 2024 - December 2024*

- Integrated MiDAS depth estimation with ScanNet scene0000 RGB-D data to reconstruct high-fidelity 3D point clouds and meshes.
- Employed YOLOv8 Nano & MobileSAM for object detection and segmentation, fusing 2D masks into a unified 3D semantic map.
- Generated 2D occupancy grids and implemented A* path planning for robust, obstacle-free navigation in complex environments. code

Speaker Diarization: Dynamic Speaker Detection & Transcription | MSU SpartaHack Award *January 2024 - February 2024*

- Designed an innovative web app aimed at enhancing virtual meeting efficiency on platforms like Zoom and Google Meet.
- Applied contour detection for speaker identification and used Tesseract OCR to extract participant names with timestamps.
- Integrated OpenAI's Whisper for accurate voice-to-text conversion and the BART for summarizing, boosting meeting efficiency. code

SKILLS

Computer languages: Python, C++, Java, JavaScript, MATLAB, R, SQL
Software/Frameworks: TensorFlow, PyTorch, Keras, Scikit-learn, ONNX, Hugging Face Transformers, spaCy, NLTK, Tesseract OCR, LangChain, LangGraph, OpenCV, Blender, Docker, Kubernetes, Terraform, MLflow, DVC, Apache Spark, Weights & Biases, Grafana, Prometheus, ELK Stack, MongoDB, Neo4j, Flask, Gradio, Streamlit, matplotlib, pandas, Git, VS Code
Data & Cloud Platforms: Google Cloud Platform (Vertex AI, Cloud Functions, App Engine, Firestore, SDK), AWS, Azure
Relevant courses: Large Language Models (LLM), Computer Vision, Natural Language Processing, Programming & Data Structures
Certifications: DeepLearning Specialization (MOOC), NLP Specialization (MOOC)