LinkedIn
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Sibi V. Thirukonda
Open to Relocation; Start by January

sibivishtantt@gmail.com
Website

EXPERIENCE

- **Morgan Stanley - Capstone : Investment Management Division** New York, NY
  Quantitative Researcher - Lead; Python, R, C++ *Aug 2024 - Dec 2024*
  - **Identified Key Investment Opportunities**: Pinpointed **Singapore and China** as top destinations for service and manufacturing investments over five years, enabling sector-specific insights that drove **25% better portfolio allocation strategies**.
  - **Improved Forecasting Accuracy**: Enhanced GDP and sector trend predictions by **30%** across nine countries by implementing **model stacking** and **advanced imputation techniques**, mitigating challenges from incomplete datasets.
  - **Quantified Market Growth Opportunities**: Developed a **Bayesian predictive framework** to analyze economic indicators like GDP and FDI, uncovering **$10B+ potential investment opportunities** in emerging markets while quantifying uncertainty for better risk assessment.

- **Northeastern University - Research Computing** Boston, MA
  Research Analyst; Python, R, JavaScript *Sep 2023 - Dec 2024*
  - **Event-Driven Architecture for Scalable ML Pipelines**: Designed and implemented **event-driven architectures** using **Kafka**, reducing ML model inference latency by **40%** and increasing system throughput by **50%**, enabling seamless processing of over **1 million events daily**.
  - **Optimized ML Model Training and Fine-Tuning**: Fine-tuned and trained transformer models for NER and classification tasks using **distributed data-parallel (DDP)** systems, reducing training time by **30%** while increasing model accuracy by **15%**.
  - **MLOps and Lifecycle Automation**: Built and automated **ML model lifecycle pipelines**, reducing deployment cycle time by **50%**. Improved performance monitoring, achieving a **95% reduction in downtimes** through drift detection and proactive model re-training.
  - **Multilingual NLP Model Scaling**: Developed and deployed **multilingual embedding models** using distributed GPU systems, increasing semantic text classification accuracy by **25%**. Processed over **10 million multilingual records**, improving globalized dataset coverage.
  - **Integration of Generative and Multimodal Models**: Integrated **text-to-image** and **text-to-speech generative models**, enhancing product feature adoption rates by **20%**. Deployed fine-tuned **Whisper** and **Vision Transformer (ViT)** models, reducing time by **35%**.
  - **NoSQL and Fault-Tolerant Data Pipelines**: Built and optimized **fault-tolerant data pipelines** using NoSQL systems like Cassandra, increasing data processing reliability by **25%**. Improved multi-node time series analysis scalability, enabling processing of **2TB+ datasets**.

- **Lennox International - Samsung America** Chennai, India
  Software Engineer; Python, R, SQL *Aug 2022 - Dec 2022*
  - **Integrated Apple HomeKit and Alexa Services for HVAC Control**: Developed middleware for seamless integration of **Apple HomeKit** and **Amazon Alexa** APIs with HVAC systems, enabling event-driven control and improving interoperability by **30%**.
  - **Implemented Apple Watch Complications for HVAC Control**: Engineered **Apple Watch complications** to provide real-time monitoring and adjustment of HVAC settings, increasing user engagement by **25%**.
  - **Enhanced Distributed System for HVAC Optimization**: Optimized distributed control algorithms, reducing latency by **40%** and increasing system responsiveness through efficient multi-threaded communication protocols.
  - **Optimized Edge-Based Multimodal Processing**: Implemented **low-latency multimodal models** for speech and visual data processing on edge devices, achieving **20% lower inference times**.

- **Madurai Smart City - Industry Institute Partnership Cell & Capstone** Madurai, India
  Senior Computer vision Researcher; Python, C++ *May 2020 - May 2022*
  - **Optimized Edge AI Performance with Vulkan**: Leveraged **Vulkan API** for GPU-accelerated object detection, reducing inference times by **30%** on edge devices, improving scalability for smart city applications.
  - **Image Processing Workflows**: Developed **CUDA-optimized pipelines**, reducing image processing times by **40%** and enabling real-time surveillance for large-scale applications.
  - **Deployed High-Performance Computing for Urban Surveillance**: Implemented **distributed computing systems** for real-time video analytics, reducing processing latency by **40%** and enabling seamless monitoring of **500+ surveillance feeds**.
  - **Optimized Object Detection Models**: Fine-tuned **YOLO object detection models** for edge devices, achieving **30% faster inference speeds** and improving vehicle recognition accuracy by **15%**.
  - **Enhanced Traffic Monitoring Efficiency**: Implemented **AI-driven smart traffic systems**, increasing traffic violation detection rates by **25%** and reducing manual oversight requirements by **20%**.

- **MLGround - Data Science Consulting** Bangalore, India
  Data Scientist; Python, Tableau, Java *Jan 2022 - May 2022*
  - **Enhanced Multimodal Anomaly Detection**: Developed **multimodal anomaly detection models** combining text and image features, achieving a **20% boost in detection accuracy**.
  - **Improved Audio Feature Engineering**: Built automated audio feature extraction workflows, reducing preprocessing times by **30%** and improving model training on speech datasets.
  - **Multimodal Analytics**: Optimized **Dask-based multimodal workflows**, achieving real-time processing for datasets combining voice and text inputs.
  - **Reduced Latency in Multimodal Streaming**: Implemented **Kafka-driven pipelines** for processing multimodal streams, achieving **sub-second latency** for fraud detection systems.

EDUCATION

- **Northeastern University** Boston, MA
  Master of Science in Data Science; GPA: 3.73; Courses: Machine Learning, NLP, Geo-Spatial Analytics *Dec 2024*

- **Anna University** Madurai, India
  Bachelor of Engineering in Computer Science and Engineering; GPA: 3.89 *July 2022*

LEADERSHIP AND ACHIEVEMENTS

- **Best Project Winner 2018-2022 Batch**: Developed a **COVID-19 monitoring system** that enhanced city-wide response efficiency by **50%**.

- **IoT Traffic Management Leader**: Created an IoT-based traffic system that reduced emergency vehicle delays by **50%** using routing algorithms.

- **Blockchain-Based Auction Innovations**: Published Ethereum-based auction mechanisms, improving transaction efficiency by **20%**.

- **IoT Patent Contributor**: Contributed to a **patent for sand moisture IoT sensors**, enhancing prediction accuracy by **15%** with ML integration.