Sibi Vishtan Thirukonda

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Education

- **Northeastern University** — Boston, MA
  Master of Science in Data Science; GPA: 3.73 — *Jan. 2023 – Expected May 2025*

Experience

- **Open Source PyTorch - Meta** — Boston, MA
  DTW Algorithm Enhancement Contributor — *May 2024 - Present*
  - **Custom PyTorch Layers for Neural Networks**: Developed custom PyTorch layers using CUDA for parallel processing, resulting in a 40% increase in model training speed for dynamic time warping (DTW) algorithms. This optimization enabled faster experimentation and deployment of new models, enhancing productivity and innovation in deep learning research.
  - **Optimized Model Deployment Pipeline**: Enhanced the PyTorch model deployment pipeline using ONNX for interoperability. This improvement reduced model loading times by 20%, facilitating seamless integration into production environments. As a result, deployment efficiency was enhanced, leading to improved user experience and operational agility.

- **Northeastern University** — Boston, MA
  Khoury College Teaching Assistant for Information, Presentation and Visualization — *Sep 2023 - Apr 2024*
  - **Guided TensorFlow Projects in Computer Vision**: Mentored students in developing advanced computer vision applications, such as object detection and image classification, using TensorFlow. Hands-on guidance improved students' technical skills significantly, resulting in a 100% success rate in project completions. This experience contributed to fostering a new generation of skilled AI practitioners.
  - **Conducted Machine Learning Workshops**: Led workshops on reinforcement learning and natural language processing (NLP) using Python, NLTK, and OpenAI Gym. Empowered students with practical knowledge and skills in advanced ML techniques, enhancing their academic performance and readiness for real-world applications.

- **Lennox International - Samsung America** — Chennai, India
  Software Engineer — *Aug 2022 - Dec 2022*
  - **Predictive Analytics with XGBoost**: Developed predictive analytics models using XGBoost for HVAC system performance monitoring. Achieved a 10% reduction in energy consumption by optimizing system operations, contributing to sustainable energy practices and operational cost savings.
  - **Deployed IoT Sensors for Real-Time Data Collection**: Integrated IoT sensors with cloud-based analytics platforms (AWS IoT and Lambda) to enable real-time data collection and analysis. Decreased response times to critical failures by 40%, ensuring higher system uptime and reliability.
  - **Optimized Energy Consumption**: Applied machine learning algorithms to optimize energy consumption in HVAC systems. This initiative resulted in a 10% reduction in energy usage, aligning with Lennox's sustainability goals and reducing operational costs.

- **MLGround - Data Science Consulting** — Bangalore, India
  Data Science Intern — *Jan 2022 - Apr 2022*
  - **Personalized Marketing Models with Keras and TensorFlow**: Built and deployed personalized marketing models using Keras and TensorFlow, increasing customer engagement by 22% through targeted marketing campaigns based on user behavior analysis. This initiative directly impacted marketing effectiveness and customer satisfaction.
  - **Automated Data Pipeline Development**: Developed automated ETL pipelines using Apache Airflow, reducing data preparation time by 50%. This streamlined data processing workflows, enabling more efficient analysis and model development, thereby enhancing productivity and data-driven decision-making.

- **Madurai Smart City - Corporation of Madurai** — Madurai, India
  Computer Vision Engineer(Project Lead) — *May 2020 - Apr 2021*
  - **Smart City Surveillance System**: Designed and deployed YOLOv4 and TensorFlow-based smart surveillance systems for real-time threat detection in public spaces. Reduced incident response times by 30%, significantly improving public safety and emergency management capabilities.
  - **Machine Learning-Based Energy Management**: Implemented Scikit-Learn for optimizing energy consumption in public buildings, leading to a 15% reduction in energy costs. This solution supported sustainable urban development goals and contributed to environmental conservation efforts.

Projects

- **Accent-Aware Named Entity Recognition**: Developed a system that integrates state-of-the-art language models (LLM) like Huggingface-OpenAI's GPT-3 for context-aware named entity recognition, enhancing accuracy in diverse linguistic contexts.
- **Enhanced Financial Time Series**: Developed a hybrid approach combining DTW with LSTM (Long Short-Term Memory) networks to analyze multivariate financial time series data. This integration improved the accuracy of predicting market trends and identifying anomalies crucial for Private Equity (PE) firms in evaluating potential investments.

Skills

- **Languages**: Python, R, C++, SQL, MATLAB, SAS, Java, C
- **Technologies**: Spark, PyTorch, TensorFlow, Scikit-learn, numPy, openCV, Shiny,NLTK, spaCy, Azure, Docker, Git
- **Data Processing and Analytics**: Data pipeline development, ETL processes, data visualization (Tableau, Grafana, Matplotlib)
- **Advanced ML**: Transformers, Time Series, NLP, RWKV LM-RNN, Random Forest, Deep Neural Networks, Generative Adversarial Networks (GANs)