Siva Sankar Udaya Kumar

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Experience

Norwegian University of Science and Technology Oct 2021 – Nov 2024
PhD Candidate *Trondheim, Norway*

- Developed and implemented a *multistage stochastic optimization model* using *Python* and *advanced algorithms* to optimize natural gas pipeline storage and improve *operational efficiency* under *uncertainty*.
- Designed *AI-driven scenario generation* techniques leveraging *GAN*s and *Reinforcement Learning* to enhance *predictive accuracy* and *computational efficiency* in large-scale optimization problems.

Indian Institute of Technology, Bombay Jul 2021 – Sep 2021
Research Assistant *Mumbai, India*

- Designed and implemented an end-to-end predictive modeling pipeline using *XGBoost* and *Apache Spark* for ETL, focused on identifying potential *vehicle insurance* customers from a public dataset.
- Developed and deployed a scalable REST API with *FastAPI, Docker*, and *Kubernetes* to demonstrate production-level readiness of the research model.

Relatas Sep 2020 – Nov 2020
Artificial Intelligence Intern *Bangalore, India*

- Developed a *Smart Opportunity Recommender* tool using *Python* and *scikit-learn*, incorporating *sentiment analysis* and *NLP* to identify high-potential sales leads.
- Deployed models on *AWS* for scalable infrastructure and performance, and managed workflows using *Jira* in an *agile* environment.

iSmile Technologies June 2020 – Sep 2020
Data Scientist Intern *Bolingbrook, United States (Remote)*

- Integrated *Computer Vision and Robotics* for autonomous object detection using a custom model built with *Azure Custom Vision*.
- Developed an *Android app* for real-time detection; leveraged *Azure DevOps* and *SAFe* for streamlined collaboration and delivery.

Education

Norwegian University of Science and Technology Oct 2021 (ABD)
Ph.D. in Stochastic Optimization *Trondheim, Norway*

- Field of Study: Industrial Economics and Technology Management
- Thesis: Short-Term Optimization under Uncertainty in the Norwegian Natural Gas System

Indian Institute of Technology (BHU), Varanasi Jul 2019 – June 2021
M.Tech. in Industrial Management (GPA: 9.11) *Varanasi, India*

- Thesis: Automated Detection and Tracking of Sewer Pipe Problems Using Inspection Videos

Technical Skills

Programming Languages: Python, SQL, MATLAB, Julia
Platforms: Apache Airflow, Databricks, Azure Cloud, GCP, AWS, DevOps Tools - Git, GitLab, Jira, Terraform
Data Processing and Big Data: Apache Spark, Kafka, Docker, Kubernetes, Hive, BigQuery
ML & AI Frameworks: TensorFlow, Scikit-learn, PyTorch, XgBoost
Dashboarding & Spreadsheet: PowerBI, Data Studio, Tableau, MS Excel
Spoken Languages: Tamil, English, Norwegian, Hindi, Telugu, Kannada

Key Projects

Real-Time Stock Analytics Pipeline

- Developed a real-time data pipeline using *Kafka, Airflow, MinIO*, and *PostgreSQL* to ingest, store, and process live stock market data from the Finnhub API.
- Designed *Airflow DAG*s to compute volatility metrics (log returns, Sharpe ratio) and trigger alerts for anomalies such as price drops or abnormal volatility.
- Built a *Streamlit* dashboard for real-time monitoring with interactive visualizations of stock trends and alert events.

Multimodal BERT Text Classifier

- Developed an enhanced *BERT* based text classification model by integrating textual embeddings with numerical features using *TensorFlow*, improving classification accuracy.