




# Siva Sankar Udaya Kumar

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## EXPERIENCE

### Norwegian University of Science and Technology

Oct 2024 – 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 *GANs* 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 

Secunderabad, India

- 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 – Nov 2024

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 DAGs* 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.