

# 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 *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

AI Researcher

Mumbai, India

- Developed an *end-to-end vehicle insurance cross-sell prediction system* using *Databricks*, *Apache Spark*, and *XGBoost*, with *MLflow* for experiment tracking and model performance optimization.
- Designed and deployed a *scalable REST API* for model inference, implementing *MLOps practices* with *Docker* and *Kubernetes* for automated deployment, monitoring, and scalability.

### Relatas

Jan 2021 – June 2021

Data Scientist

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.

### Iha Consulting Services

Oct 2020 – Dec 2020

ML Engineer

Secunderabad, India

- Developed a *Human Activity Recognition model* using *Ensemble Learning* on multi sensor time series data, performing feature engineering and exploratory analysis to enhance predictive accuracy.
- Built an *end-to-end MLOps pipeline* for model training, versioning, deployment, and monitoring, integrating *CI/CD workflows* for production grade reliability.

### iSmile Technologies

June 2020 – Sep 2020

AI Engineer

Bolingbrook, United States (Remote)

- Led a *team of three* in integrating *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 and coordinated delivery using *Azure DevOps* and *SAFe*, ensuring streamlined collaboration and project execution.

### CodeSpeedy Technology

Apr 2020 – June 2020

AI Developer

Kolkata, India

- Developed a *hybrid BERT based text classifier* that fused textual embeddings with engineered numerical features using *TensorFlow*, improving accuracy over text only baselines.
- Designed and trained a *multimodal architecture* integrating structured metadata and unstructured text to classify web articles as evergreen or non-evergreen.

### Quantel

Jan 2020 – Mar 2020

Data Science Intern

Delhi, India

- Developed a *real-time image and video processing pipeline* in *Python* using *OpenCV* and *NumPy* to automate dynamic blending and visual transformations.
- Designed *algorithmic solutions for pattern detection and metadata extraction* across numerical and visual data, strengthening foundations in multimodal data analysis.

## 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

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**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

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### 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.