

Work Experience

eSMART Technologies Machine Learning Engineer

Renens, Switzerland
June 2018 – Present

- **Predictive maintenance using Anomaly Detection** [Thesis](#)
 - Performed ETL using Pandas and SQL.
 - Used Clustering and Regression to detect anomalies in heating energy consumption of apartments.
 - Built a dashboard to raise alarms for the maintenance team to monitor.
 - Used AWS Sagemaker to train and monitor the ML model.
- **Real Time Analytics using Spark:** Developed a Heating Distribution Algorithm using Spark on Streaming data captured by IoT sensors.

NEC Labs America Machine Learning Research Intern

Princeton, USA
Feb 2017 – Jul 2017

- **Object detection using Deep Learning:** Fine-tuned final layers of YOLOv2 to detect custom objects (tandem) in traffic surveillance dataset. Used Data Parallelism on GPU to reduce the training time by 60%.
- **Scene Understanding** Trained a relationship detector for scene understanding using Deep Learning in PyTorch.

Signalchip Innovations Signal Processing Engineer

Bangalore India
Mar 2012 – May 2015

- Joined the semiconductor startup as the fifth employee, developed Signal Processing algorithms for Wireless Communications - WCDMA, LTE.

Indian Institute of Science Junior Research Fellow

Bangalore India
Jun 2011 – Feb 2012

- Developed efficient algorithms for image reconstruction in Diffuse Optical Tomography using MATLAB.

Projects

Image segmentation using Deep Learning for e-commerce applications [Report](#) [Code](#)

Aug 2020

- Used transfer learning to fine-tune MobileNet to perform image segmentation of products for ecommerce websites in Tensorflow.
- The developed model could segment custom products, had 10x faster inference time and was 3x smaller than pre-trained model.
- Model is served using Docker, FLASK and deployed on AWS.

Predictive Modeling, List Description based Search Rankings for Airbnb [Predict-Report](#) [Search-Report](#) [Code](#)

Sep 2020

- Performed EDA, Pre-processing, Feature selection using Pandas on Airbnb dataset.
- Trained ML models using scikit-learn to predict prices of Airbnb listings.
- Built NLP pipeline and performed topic modeling on listing description.
- A/B testing on simulated data to compare the different search rankings.

Contact

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Education

2015 – 2018

Master of Science
EPFL, Lausanne Switzerland
COMMUNICATION SYSTEMS

2007 – 2011

Bachelor of Engineering
RVCE, Bangalore India
ELECTRONICS AND COMMUNICATION

Skills

Python, Spark, SQL, Langchain,
Numpy, Pandas, FastAPI, Docker

AWS

Sagemaker, EC2, S3, Lambda,
Kinesis, Redshift, DynamoDB

Machine Learning

Scikit-learn, Clustering, Anomaly Detection
PyTorch, Deep Learning for Vision
Time Series Forecasting, Predictive Modeling

Journal Publications

Medical Physics - 2012

Data-Resolution based Optimization of the Data-Collection Strategy for Near Infrared Diffuse Optical Tomography. [Link](#)

IEEE JSQTE - 2012

Mesh simplification based on edge collapsing could improve computational efficiency in near infrared optical tomographic imaging. [Link](#)

Patent

Signalchip Innovations - 2017

Method and system for symbol level interference cancellation at a receiver for multiuser detection. [Link](#)

Signalchip Innovations - 2016

Method and System for Performing Optimized Channel Estimation. [Link](#)