Adithya Iyer

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Education

Courant Institute of Mathematical Sciences - New York University — New York, NY
Masters in Computational Science — *Aug. 2022 – Present*

Indian Institute of Technology Bombay — Mumbai, India
Dual Degree(Btech+Mtech) in Metallurgical Engineering and Materials Science — *July. 2016 – May 2021*

Experience

McKinsey & Company — Risk Dynamics Group — July 2021 – March 2022
Analyst/Associate Consultant — *Delhi*

- Responsible for the complete **credit underwriting automation** for the Self-Employed customer segment for a major Indian banking client; created system to automate underwriting of portfolio worth **60+ mil USD** annually
- Built **5+** qualitative and quantitative models in **R** from bureau, financial and other quantitative data sources
- **Conducted** workshops for historical data collection, ensured population stability of variables and planned and executed complete **on-ground implementation** of models; model to be used by **100+** credit underwriters
- Built prototype models for implementation, and launched a **pan-India pilot** to kick-off adoption of credit model

Round Finance — May. 2022 – Aug. 2022
Backend Developer — *Mumbai*

- Responsible for building backend systems and APIs in **AWS Lambda/MongoDB** by leveraging ***Node.js*** to enable instantaneous verification of payments in **cryptocurrencies** for the RoundPe payment gateway
- Ideated, structured and implemented the **crypto-donation link** backend system to accept crypto donations
- Setup email and multi-factor authentication; used **JWT tokens** to verify users/admins for selective data access
- Conducted load testing of concurrent payments; set up **API rate limits** to protect against malicious activity

Budnip : Copernicus Accelerator, European Space Agency (ESA) — Jan. 2020 – Jan. 2021
Co-founder : Mentored by Dr Alireza Taravat, Deimos Space UK — *Remote/Copenhagen*

- **Winner** of the **Oi-X Hackathon** jointly conducted by **DTU Skylab** and **Copernicus Program** in Denmark
- Built a **U-Net** based semantic segmentation Deep learning model to classify crops based on indices created
- Presented poster titled '***Comparative Study of Neural Networks and Machine Learning Models for Winter Wheat Crop Classification in Denmark***' at the ESA EO *ϕ week* 2020
- Received business and market related training with the **Copernicus Accelerator Training Lab**

Projects

Structure-Property Relations from Microstructural Images - Thesis — July 2020 – May 2021
Master's Project: Guide: Prof. M P Gururajan and Prof. Hina Gokhale — *IIT Bombay*

- Awarded **Undergraduate Research Award (URA3)** for excellence in research by the Dean
- *MIST (MIcrostrusture STatistics): A open source library in Python for the analysis of anisotropic microstructures*: **paper under review**, library can be found **here**
- Derived **Spatial Probability Distributions** of binary microstructures, **benchmarked** results against SoTA
- Designed a **Quick Union-Find** based **Hoshen-Kopelman** clustering algorithm for periodic binary images

Missing Data Importance Weighted Autoencoder (MIWAE) — Sep. 2019 – Dec. 2019
Guide: Prof. Jes Frellsen — *DTU Copenhagen*

- Implemented Importance Weighted Autoencoder (**IWAE**) by **Burda et al.** on MNIST dataset using Pytorch
- Removed pixels to create **incomplete MNIST** dataset; used custom imputation functions pre-training
- Built a **MIWAE** by training on imputed data; produced complete images from incomplete test dataset

Technical Skills

Computation related courses: Process Control, Simulation and Optimisation, Data Analysis and Interpretation, Numerical Analysis, Machine Learning, Digital Image Processing, Deep Learning, Probability and Random Processes

Programming Skills/Software Packages: Python, Pytorch, Node.js, React, R, MATLAB, LaTeX, MongoDB, git