

MADHUSUDAN KUMAR

Senior Data Scientist

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PROFESSIONAL EXPERIENCE

Senior Data Scientist

Tata Consultancy Services

📅 Dec 2021 - Ongoing

📍 Mumbai, India

Telecommunication

- Headed a team of 6 members, developing ML based solution for 10+ usecase from scratch for telecom fault and performance management leading to decrease in 15% reduction in events and enable close loop automation for 25% event
- Collaborated with data engineer, domain expert and solution architect to design federated ML architecture to deploy ML solution across 5000+ sites to limit the response time in seconds
- Headed client engagement calls, enabling modeling transparency, building trust and gathering client requirement for ML solutions
- Lead the product development of web based ML exploration tool for faster development of ML solutions by data scientist

Federated ML

Leadership

Deep Learning

RL

MLOps

Data Scientist

Tata Consultancy Services

📅 Apr 2019 - Nov 2021

📍 Mumbai, India

Telecommunication

- Proposed, designed & built Python package for integration of 24+ ML use cases across 4+ applications, reducing integration time by 60%
- Improved predictive maintenance by one day-ahead forecasting of faults (CORE & RAN) (POC)
- Reduced number of tickets by automating the identification of alarm's cluster with root alarm (POC)
- Improved network performance by deploying real time anomaly detection of network loss and latency on azure cloud (POC)

Text mining

TDD

Anomaly detection

Communication

Insurance

- Automated and optimised monthly forecasting of claims paid and premium collected, reducing average Mape by 10%

Timeseries forecasting

SQL

Data wrangling

ARIMA

Research Internship

Chiba University

📅 May 2016 - Jun 2016

📍 Chiba, Japan

- Explored linear diffusive coupled neurons (FHN coupled system) with heterogeneous external forcing to study pattern formation
- Conducted nonlinear stability analysis to obtain significant parameters & visualize their behaviour near stability points to understand contribution to pattern formation

Visualization

MATLAB

Linear algebra

SKILLS

Python

NumPy

Plotly

Pytest

Scikit-learn

Pandas

Keras

FastAPI

SQL

Elasticsearch

MLOps

Git/GitHub

Azure

Linux

Docker

EDUCATION

M.Tech in Mechanical Engineering

IIT-B

📅 Jul 2017 - Nov 2018

- Specialization in CADA
- Successfully designed process to predict the failure time of new installed machine on the network to minimize the operation down time
- Proposed and implemented standard template to digitally store properties of machine component from different vendors, optimising the digital processing of components

B.Tech in Mechanical Engineering

IIT-B

📅 Jul 2013 - Jun 2017

- Successfully headed official video channel of IIT-BBC, leading a team of 6 conveners, creating 60+ videos and covering 35+ events, with nearly 2 million views
- Data Analysis and Interpretation
- Statistical Machine Learning and Data Mining

EXTRACURRICULAR

- Mentored 100+ students to produce 20+ short films during Freshizza festival
- Core team member of "Mechanical Freshie", a video with more than 630,000 views
- Supported students with physics classes for IIT-JEE exam

CERTIFICATION

- Data Analysis with Pandas and Python
- Python for Timeseries Data Analysis