

# MADHUSUDAN KUMAR

## Senior Data Scientist

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## PROFESSIONAL EXPERIENCE

### Senior Data Scientist

#### SecureThings.ai

📅 Sep 2022 - Ongoing

📍 Mumbai, India

#### Automotive Cybersecurity

- Utilize advanced machine learning techniques to extract highly specific cybersecurity labels, entities and relationships
- Design Graph Neural Networks to extract contextual features from knowledge graph for improved threat detection

NER NLP API Semantic Analysis Statistics

### Senior Data Scientist

#### Tata Consultancy Services

📅 Dec 2021 - Sep 2022

📍 Mumbai, India

#### Telecommunication

- Led a team of 6 in designing a federated ML architecture for 10+ fault and performance management usecases across 5000+ sites, in partnership with a data engineer, domain expert, and solution architect for swift response.
- Headed client calls to ensure transparency and explainability of models while gathering requirements for ML solutions.

Federated ML Client Engagement Online Learning

### Data Scientist

#### Tata Consultancy Services

📅 Apr 2019 - Feb 2022

📍 Mumbai, India

#### Telecommunication

- Proposed, designed & built Python package for integration of 24+ ML use cases across 4+ applications, reducing integration time by 60%
- Optimise network management by building usecases for predictive maintenance of network, reduced fault ticket generation and detection of network performance loss.

Text mining Event Forecasting Anomaly detection TDD

#### Insurance

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

Timeseries forecasting Reporting Data Analysis 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

Visualization MATLAB Linear algebra

## SKILLS

Python NumPy Plotly Statistics

Scikit-learn Pandas Keras

FastAPI SQL MongoDB MLFlow

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