

# Manabendra Rout

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## SKILLS

### PROGRAMMING

Expert:

Python3 • VBA • HTML • CSS

Matlab/GNU Octave

Basic Proficiency:

C • C++ • JavaScript

Familiar:

C#

### MACHINE LEARNING

Regression • Classification • DNN

Clustering • Computer Vision • NLP

Transfer Learning • PCA

### PACKAGES

Scikit-learn • Tensorflow • NLTK

LightGBM • CatBoost • XGBoost

Matplotlib • Seaborn • Plotly

### DATABASE

MongoDB • SQL

### GUI

PyQT5 • Tkinter • Flask

## LINKS

Github:// [mrout94](#)

LinkedIn:// [manabendrarrout](#)

## EDUCATION

### NIT ROURKELA

B. TECH IN MECHANICAL

ENGINEERING

Grad. May 2016 | Odisha, India

Cum. GPA: 8.08 / 10

### ODM PUBLIC SCHOOL

AISSCE IN SCIENCE

Grad. May 2012 | Odisha, India

Percentage: 89.2%

### ODM PUBLIC SCHOOL

AISSE

Grad. May 2010 | Odisha, India

Cum. GPA: 9.2 / 10

## ACHIEVEMENTS

- AIR-7526 in AIEEE-2012 with State Rank of 87.
- Awarded with CAFAS Scholarship from State Govt.

## EXPERIENCE

### BAJAJ AUTO LTD. | ASSISTANT MANAGER, R&D DIVISION

July 2016 – Present | Pune, India

- Using Quantitative as well as Statistical models to predict Durability and Dynamic behaviour of Engine components for motorcycles.

ML:-

- Developed a statistical model using GBM to predict bearing frictional loss based on some basic geometrical dimensions and usage which reduced turnaround time by 12%. Deployed across whole research division.
- Developed an end-to-end internal tool using Statistical model based on DNN to predict strength of ferrous materials using their material composition (numerical data) and manufacturing methods (categorical data). Deployed and running as a web-service on local network.
- Created various internal tools based on Data driven Statistical models using ML to solve design and quality issues specific to components.
- Developed a Statistical model using the logged data from the PyQT5 GUI (described in the automation section below) to suggest important strategic decision and optimization of available resources.

Visualization/GUI:-

- Developed a robust data Visualization and comparison framework using Python, Plotly and Flask. Service up and running on a live server.
- Increased resource management efficiency by 35% by developing a PyQT5 based GUI for Queue management tool to track and assign license tokens to users based on requests and task priority. This also employed a MongoDB based database to record user requests, frequency, workload pattern, etc.

Process Automations:-

- Accomplished 90% reduction in time and 20% improved accuracy by developing a web-framework for test-data handling, processing and storing in an MongoDB database. Framework is up & running in production server.
- Decreased simulation post-processing time by 95% by developing a tool for post-processing and PowerPoint presentation creation through a combination of scripts using Python and VBA. Deployed and running throughout the business unit.
- Created numerous internal tools using Python and VBA to save time, improve accuracy and reduce tediousness of day to day repetitive tasks.

### TATA MOTORS | SUMMER INTERN

May 2015 – July 2015 | Jamshedpur, India

- Anomaly detection, source identification for large scale torque variations among all production Cargo-Truck engines.
- Key process parameters identification and ranking based on output correlation.
- Achieved 35.7% reduction of variation band after implementation of suggested modifications on process parameters.

### TEAM ROADRUNNER | FORMULA STUDENT TEAM OF NIT-ROURKELA

Vice-Captain & Powertrain Lead | Dec 2014 – Feb 2016 | Odisha, India

- Retrieved processed data-logs, derived useful insights which was used in driver training, design evaluation, design improvement and design validation as part of continuous evolution of the race machine and drivers.

Powertrain Engineer | Dec 2013 – Dec 2014 | Odisha, India

- Post-processed the raw data-logs from Data-Acquisition-System into consistent and usable format through simple process-automation.