



ROHIT MUNDRA | 14HS20032

ECONOMICS (M.Sc. 5Y)



Year	Degree/Exam	Institute	CGPA/Marks
2019	M.SC(5YR)	IIT Kharagpur	7.53 / 10
2013	AISSCE	CBSE	85.60%
2011	AISSCE	CBSE	9.60 / 10.00

#### AWARDS AND ACHIEVEMENTS

- Secured **First** position in national level **Business Case Study** competition conducted as a part of Annual Management Fest 2017, **IMT Ghaziabad (India)**
- Secured **AIR 3359** among **1356000** candidates (Percentile: 99.75) appeared in IIT-JEE'14 and **Rank 99** in Rajasthan Pre-Engg. Test'14 (Percentile: 99.83)

#### INTERNSHIPS

**Fractal Analytics | Data Science Intern | AIML Team | May - June 2018**

**Title: Forecasting Timeseries at Scale**

- Engineered python library that generates forecast using **20+ timeseries based models** to benchmark client projects with minor expert supervision
- Optimized hyper-parameter tuning, model fitting and selection techniques along with procedures for missing data, outliers, non-linear trends, seasonality
- Transcended client's best multivariate model accuracy by 15-20% and brought **Integral Normalized Absolute MAE** for test data in **[0.05, 0.15]** range
- Transformed multivariate time series variables into a regression model based features that trains **LightGBM** to achieve Unilever's Accuracy upto **90%**

**Rapido - Roppen Transportation Services | Data Analyst Team | May - June 2017**

**Title: Bike Taxi Dispatching System**

- Automated generation of business useful dashboard, extracting data using **MongoDB** queries interfaced with pymongo, pytz, collections etc. libraries
- Executed and monitored **Coupon Analysis, Driver Performance Reports, Area-wise Bike Station's Cluster analysis** for daily validating extracted insights
- Implemented **regression model** to reduce supply-demand mismatch by optimizing dispatching of fleet of bike (taxi) and allocation of orders to bike riders
- Formulated a **six-stage clustering** and **timeseries modelling** techniques for forecasting supply parameters for n-hour horizon across all area wise cluster

**GreekTurtle Bangalore | Machine Learning Engineer | Dec 2017**

**Title: Intelligent Resume Recommender**

- Trained **Random Forest Model** to select and benchmark features from Bullet Feedback, System Feedback to build a Resume Scoring Module
- Extracted various textual features from resumes to train **pre-trained neural network** that helps replacing weak action verbs with strong verbs
- Benchmarked using trained parameters that helps **suggesting and recommending trails** for improvements in sections or bullets of the inputted resume

**Risk Latte Americas Inc. | Winter Internship | Dec 2016**

**Title: Analysis of Hyper Parameters on GA**

- Implemented a solution for **Travelling Salesman Problem** using combinatorial optimization approach of **Genetic Algorithm (GA)** along with a UI in VBA
- Explored relative effectiveness of mutation, crossover, and its combinations by visualizing systematic variations in hyper-parameters while solving TSP

#### PROJECTS

**Bachelor of Sciences Dissertation | IIT Kharagpur | Jan - April 2017**

**Title: Bank Competition and Financial Stability**

- Carried out state-level bank failures and enforcements analysis for the commercial banking sector in USA using the recent financial crisis as the setting
- Examined the trade-offs between stability of the financial system and competition within the banking industry using **multi-level linear regression model**
- Analysed the effect of bank competitiveness on regulatory actions taken against banks during crisis period Of 2007-10 using **logistic regression**

**Regression and Time Series Term Project | Dept. of Mathematics | July - Nov 2016**

**Title: Predicting US Recession**

- Adopted an **Efficient Probit-miss model** to map and estimate the US recession probabilities after addition of partially observable predictor variables
- Evaluated best fit model by comparing each model's recession classifying ability using **AUROC metric** for an entire spectrum of evenly spaced thresholds

**Master of Sciences Thesis (Part I) | IIT Kharagpur | July 2018 – Present**

**Title: ICO Scam Identification and Rating**

- Implementing scam rating system using **Hierarchical LSTM model** to predict proportional price changes of given **2251+ crypto currencies** in 1 year of ICO
- Adopting an unsupervised approach that trains **Skip-thought Model** using Glove vectors from white papers, founding team's bios, Github repositories etc.

**Udacity Self-Driving Car Engineer (Term Project I) | Aug 2016**

**Title: Detect highway lane from a Video**

- Created end-to-end pipeline for detection of road lanes in a frame taken from a roof-mounted camera using **Hough transforms & Canny edge detection**

#### COMPETITION/CONFERENCE

**Inter Hall Data Analytics Competition | IIT Kharagpur | Feb 2017**

**Title: Ranking ATM Service Provider**

- Instigated **Point Pattern Analysis** and **Kernel estimation** to statistically represent the spatial variation of a point distribution of ATM service providers
- Evaluated competitive strength of 3 ATM service providers in presence of heterogeneous environment and visualized the results using **QGIS Software**
- Utilized Competitive Score from Point Pattern Analysis to calculate business potential and revenue generation for all given zip-codes across California

**Kaggle Competition | IIT Kharagpur | May 2018**

**Title: House Prices Prediction**

- Engineered 80+ variables into **433 features** after processing for outliers, encoding variables, imputing missing values and removing other inconsistencies
- Predicted sales price for each house using **Lasso Regression, XGBoost etc.** Visualized XGBoost feature importance and its dependence using **Shap** library
- Secured position in top **13% out of 4764** candidates with **0.1178 RMSE** between the log of the predicted value and the log of the observed sales price

#### COURSEWORK INFORMATION

**Deep Learning Specialization** (Coursera, Andrew Ng) | **Machine Learning** (Coursera, Stanford) | Probability and Statistics | Computational Statistics | Design and Analysis of Algorithm | Programming and Data Structures | Econometric Analysis | Operation Research | Regression and Time Series

#### SKILLS AND EXPERTISE

**Languages and Tools:** C, C++, Python (PyFlux, Hyperopt, PyMongo, NLTK, Sci-kit, Shap Numpy, Pandas, OpenCV), R, MongoDB, Matlab, HTML, Excel

#### POSITIONS OF RESPONSIBILITY

**Student Department Representative | Career Development Centre | IIT Kharagpur | Nov 2016 - April 2017**

- Rendered systematic supervision to 1200+ students and assistance to 100+ company's officials to expedite their corporate interactions during placements

**Vice-Captain | Inter Hall Case Study | General Championship | IIT Kharagpur | July 2016 - April 2017**

- Steered and represented 20+ membered **Gold** winning team of Inter-hall Case Study held during General Championship 2015-16 and 2016-17

**Secretary | Communique | Technology Students' Gymkhana | IIT Kharagpur | July 2015 - April 2016**

- Streamlined English Learning Program for 600+ freshmen and conducted regular Placement Drives, Internship Seminars etc. for 500+ final year students