



Aniket Niranjana Mishra

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Aniket Niranjana Mishra
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Academic Background

2017-2022 (Expected)	Dual Degree in Metallurgical and Materials Engineering with specialization in Financial Engineering Department Rank 3 till 5th semester Indian Institute of Technology, Kharagpur	GPA: <u>9.03/10.0</u> (* Ongoing)
2015-2017	All India Senior School Certificate Examination, CBSE S.R. Public Senior Secondary School, Kota	Percentage: <u>96.8%</u>
2015	All India Secondary School Examination, CBSE Kendriya Vidyalaya (AFS), Utarlai	CGPA: <u>10/10</u>

Technical Skills

Programming Languages	Python, R, C, C++
Libraries / Frameworks	TensorFlow, scikit-learn, OpenCV, Numpy, pandas, Matplotlib, Seaborn, Cufflinks, SciPy, Plotly
Systems / Platforms	Git, Windows, Linux
Softwares	MATLAB, Bloomberg database, Anaconda, ProwessIQ, GNU-Octave, Simulink, Origin, MS-Office, Jupyter Notebook, LaTeX, SolidWorks, Minitab

Internships

Dec 19	Research intern Centre for Analytical Finance, Indian School of Business (Hyderabad)
Jan 19	<ul style="list-style-type: none">- Worked towards developing, modifying and implementing a PAIRS trading algorithm for the Indian stock, options and futures markets at the NSE Trading Lab, Centre for Analytical Finance, headed by Prof. Prasanna Tantri- Modified the Pairs strategy on a 1 year rolling window with 12% CAGR and 0.71 overall Sharpe ratio in Python- Worked towards Implementing PEAD (Post Earnings Announcement Drift) using SUE as a metric of decile formation in Nifty 50 universe and back tested if it can still produce returns in Indian Markets- Researched the intricacies involved in various trading strategies such as Piotroski's f-score, fama french four factor model, g-score, betting against beta and momentum and momentum crashes- Performed unsupervised K-Prototypes clustering on loan application data and developed a hypothesis on how to model network contagion within clusters- Performed sentiment analysis on Indian financial news using nltk's vader library and analysed its applicability on analyst's EPS predictions- Performed textual analysis on US firm's 10-Q filings using Loughran McDonald financial dictionary in Python

Research Experience

Mar 19	Prediction of high temperature flow behaviour of Ti alloys as a function of chemical composition and micro-structure employing feed-forward artificial neural network Dr. Sumantra Mandal, Associate Professor, MME, IIT Kharagpur
Present	<ul style="list-style-type: none">- Mined data related to high temperature flow behaviour of titanium alloys and modelled an artificial neural network in MATLAB and PYTHON- Developed a robust feed forward ANN model employing back propagation with bayesian regularisation that efficiently predicts the high temperature flow stress of Ti alloys as a function of chemical composition, microstructure and various processing parameters (temperature, stain, strain rate)- Achieved 94.7% accuracy on the test set, scatter index value of 0.106 and regression coefficient of 0.99104- Assessed the predictability of ANN model employing various statistical parameters like (Root mean square error, Scatter index, Adjusted R square)- Assessed the relative importance of input variables using Multiple linear regression and Most squares algorithm- The developed model can be used to design new Ti alloys to achieve desired high temperature flow behaviour
July 19	Modeling Integration of Emerging Market Indices with Machine Learning Methods Dr. Abhijeet Chandra, Assistant Professor, VGSOM, IIT Kharagpur
Present	<ul style="list-style-type: none">- Aimed at forecasting long-duration financial time series of global indices- Under study financial indicators include market indices of emerging economies along with gold and crude oil prices- Proposes to implement statistical, ML and mixed methods to estimate price indices of 10 major indicators- Aimed at capturing uncertainties/shocks in global markets through regime switching techniques and decomposition-based reinforcement learning methods- Algorithms to be fine-tuned by incorporating extreme events and fat-tailed properties

Achievements

- **National Sustainability Case Challenge, 2019**
Secured second rank among 500 participant teams from all over India, worked on a case analysis for developing IoT based solutions for Indian smart cities network
- **Enviro Case Study, GREAT STEP 2018**
Secured second position among 50 participating teams, proposed an industry implementable methodology for mitigating the levels of carcinogenic hexavalent chromium content in Chromite mines discharge in Sukhinda Mines, Odisha
- **Gold Medal, Technology General Championship, 2018**
Secured gold medal in Sci-Tech Quiz at institute level as part of Technology General Championship, 2018

Interests

Machine Learning, Data Analytics, Analytical Finance, Algorithmic trading

Projects/Industrial Experience

- **Term project, Reliance Communications Ltd. bankruptcy analysis**
Analyzed the balance sheet & cash flows of Reliance Communications Limited and identified reasons behind its near bankruptcy. Extracted data from Bloomberg database & performed ratio analysis to pinpoint causes
- **Mineral Development Awareness Programme 2019, Society of Geoscientists and Allied Technologists (SGAT)**
Ferro-manganese & sponge iron plant visit, Quiz competition among Metallurgy & Mining students of Indian colleges
- **Indian Case Challenge 2019, Business Club, IIT Kharagpur**
Analyzed IKEA's entry into Indian markets, suggested location of its first store using break even forecasting. Studied its market competition and suggested measures to capture market share and maintain profitability

Theoretical Coursework

* Currently Studying

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| • Programming and Data Structures | • Metallurgical Thermodynamics | • Partial Differential Equations |
| • Probability and Stochastic Processes | • English for Communication | • Regression and Time series model |
| • Basic Electronics | • Deformation Behaviour of Materials | • Corporate Finance & Accounting |
| • Data Structure and Algorithm* | • Data Analytics | • Phase transformation & heat treatment |

Laboratory Experience

* Currently Studying

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|---|--------------------------------------|
| • Programming and Data Structures Lab | • Electrical Technology Lab |
| • Phase transformation & Heat treatment Lab | • Mechanical Testing and Working Lab |
| • Metallurgical thermodynamics & Kinetics Lab | • Basic Electronics Lab |

Certifications & MOOC Courses

* Currently Studying

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| • Lean Six Sigma Green Belt - KPMG India | • Convolutional Neural Networks* - Coursera |
| • Advanced Trading Algorithms - Coursera | • Introduction to Financial Markets - Coursera |
| • Neural Networks & Deep learning - Coursera | • Time valuation of Money - Coursera |
| • Structuring ML projects - Coursera | • Bloomberg Market Concepts - Bloomberg LLP |
| • Sequences, Time Series and Prediction - Coursera | • Hyperparameter tuning, Regularization & Optim.- Coursera |

Extra-curricular involvements

- **Secretary, Technology Affairs** Rajendra Prasad Hall, IIT Kharagpur
Responsible for conducting Technology General Championship events at hall level, involving 800+ students
Participated in Data Analytics and Case study events
- **Associate** Students' Alumni Cell
Part of a team managing and organizing 15th Annual Alumni Meet, 2018
- **Junior Executive Member** Gopali Youth Welfare Society
Part of the design team, worked on Adobe Photoshop for making videos and posters for events
Non Governmental Organization works for providing affordable education to children of nearby villages
- **Mentor** Student's Welfare Group
Mentoring first year students under the guidance of DEAN (Student Affairs), providing career guidance and conducting counselling sessions
- **B-certificate** National Cadet Corps
Awarded NCC B Certificate under EME (Electronics and Mechanical Engineers) division