ADITYA GIRISH PAWATE

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Institute	Course	Grade	Degree/Exam	Year of completion
IIT KHARAGPUR	Mathematics and Computing (Integrated MSc)	**9.7/10**	3rd Year	2018 July -2023 July
FIITJEE PU COLLLEGE	Karnataka Pre-University Board of Education	**94%**	12th Standard	2016 July -2018 July
JSS PUBLIC SCHOOL	Central Board of Secondary Education	**10/10**	10th Standard	2015 July -2016 July

COURSEWORK

IIT Kharagpur Courses And Corresponding Grade:(EX-10,A-9,B-8)
Economics-EX | **Probability and Statistics-EX** | Financial Institutions and Markets-A | **Data Structures and Algorithms-EX** | Discrete Mathematics (Graph Theory and Combinatorics)-A | Transform Calculus-EX | Basic Electronics-EX |Electrical Technology-EX |Numerical Solutions to Ordinary and Partial Differential Equation-EX | Physics-EX | Chemistry-EX

MOOC's certifications and Corresponding Grade: (in %)
Machine Learning With Python - *(100)- IBM,*
Deep Learning Specialization - *(100)- Deeplearning.Ai,*
Python For Data Science - *(98) - IBM,*
DeepNeural Networks with Pytorch - *(100) - IBM,*
Natural Language Processing with Tensorflow - *(100) - IBM*

AWARDS AND HONORS

- Academic Excellence: **Rank 1** across all deparments institute-wide in the 1st semester with a 10 CGPA. Currently Department Rank 3.
- Departmental Change: Among the **top 0.004%** students to be given the privilege to join Mathematics and Computing Branch.
- Kvpy Scholar (2016, 2017): All India Rank 520 in 2016 and 1445 in 2017 and among the **top 0.01%** of its total applicants all over India
- Indian National Math Olympiad in 2016 with a **State Rank 4** in Regionals and National Talent Search Exam in 2015 with **State Rank 21**

INTERNSHIP

Explainable AI in High Energy Physics (Data Analytics, Modeling) May 2020 - August 2020

*Under Natalia Diaz Rodrigeuiz, **Autonomous Systems and Robotics**, Professor at **ENSTA ParisTech, France** in collaboration with **CERN** scientists Simone Gennai, Pietro Govoni and Fabio Stella from **University of Milan-Bicocca, Italy***

- Created a classification model for the trigger path of HH->bbbb event in Large Hadron Collider for upcoming CMS Run3 in 2021.
- Implemented many ML models including Bayesian Networks, XGBoost, Random Forest, Decision Tree, KNN Classifier, Gradient Boosting Machines, Generalized Linear Models, DNN, CNN, LSTM, GRU and Variational Autoencoders using Bayesian Neural Networks, etc.
- Created explanation frameworks in order to build trust in our model using LIME, SHAP, GRAD-CAM, DeepLIFT, DeepRED, CausalNex.
- Checked for the robustness of our model by Gaussian Smearing, Kolmogorov-Smirnov Test and Environment Simulation Test.
- Achieved 60% Signal Acceptance for less than 0.2% background acceptance while the 2018 benchmark for CMS run 2 had a 22.6% Signal Acceptance with similar background acceptance. The model was reasonably robust against changes to the variables.

PROJECTS

Computational Linguistics Conference (COLING) (Text Graphs 2020) March 2020 - October 2020

- **Co-authored a paper** at the workshop in TextGraphs 2020 shared task at COLING conference on Multi-hop Inference for Explanation Regeneration in which we developed methods to reconstruct gold explanations for elementary science questions.
- Developed a model with an improvised Information Retrieval using tf-idf vectorizer to rank all the explanations in the dataset.
- Developed a unique re-ranker model with **BERT, RoBERTa, and SciBERT** and got a MAP score of 0.4902 and 4th position on the leaderboard.

Research Project (Analysis, Classification and Modeling of the data) Jan 2020 – April 2020

Under Anirban Mukherjee, Signal Processing and Machine Learning Group, Professor at Electrical Department, IIT Kharagpur

- **Co-authored a paper** on *Deep Learning Model-based Heart Murmur Detection using Adaptive Synthetic Sampling Approach*
- Developed a noble automatic detection framework that employs 1-D CNN for detection of pathological heart murmurs is proposed, which eliminates the challenging task of feature extraction and selection. It directly works on the phonocardiogram (PCG) signals.
- Investigated whether a reliable detection of heart murmurs can still be achieved when the dataset is imbalanced and achieved accuracy of **0.987**

Research Project (Data Analysis and Plotting) July 2019- November 2019

Under Ajay Kumar Mishra, Professor at Vinod Gupta School of Management, IIT Kharagpur

- Modeled a Time Series Analysis of Indian Stock Market with the Algorithmic Trading dataset using Pandas, NumPy, and matplotlib.
- Analysed that algorithmic trading directly affects the liquidity and volatility of the Indian stock market.

POSITIONS OF RESPONSIBILITY

Founder and Proprietor of ChiSquareX (July 2020-Present)

- Founded an online Artificial Intelligence Service providing company which takes projects from various companies and individuals from all over the globe and provide a solution to their problems. Our clients are acquired from various freelancing websites like freelancer, upwork etc.
- Company is currently in the development stage with only five part-time employees from IIT Kharagpur.

Associate Member(Aug 2018 – July 2019), Subhead(July 2019 – April 2020) at Business Club IIT Kharagpur

- Mentored 40+ freshmen in wide range of topics such as Clustering, Data Analytics, Game Theory and Competitive Strategy .
- Managed Nomura and Intel workshops intra-club Financial Quizzes and Case Studies Competitions to enhance the Case Study culture.
- Managed the 1st International Edition of flagship event Indian Case Challenge in collaboration with ZS and WAC with 1500+ registrations.
- Organized regular open house sessions conducted by various eminent personalities with a footfall of more than 500 students.
- Achieved 5x budget growth and 45% YoY growth in participation in the latest edition of Indian Case Challenge.

TECHNICAL SKILLS

C | C++ | Python | NumPy | TensorFlow | sklearn | Keras | PyTorch | Matplotlib | MATLAB | Ms Office | GCP | Kubernetes | TPU | AI Platforms |

COMPETITIONS

GOLD: DATA ANALYTICS GENERAL CHAMPIONSHIP in the intra IIT tournament among 22 hostels **2020**

- Conducted Exploratory Analysis of Time Series, Decomposition of Time Series, Augmented Dickey-Fuller(ADF), and Feature Engineering.
- Modeled the dataset with Statistical Models such as Holt's Winter Smoothing and ARIMA Modeling which understood the seasonal trends well.
- Modeled the dataset with Deep Learning Models such as N-BEATS and LSTM which was able to capture the complex long term trends as well
- Used Orthogonal Array Tuning Method is balanced to ensure that all possible values of all hyper-parameters are considered equally.

SILVER: INTER IIT BASKETBALL participation from all 23 IITs and a footfall of more than 2000 players **2019**

BRONZE: CASE STUDY GENERAL CHAMPIONSHIP related to the Adventure Sports Industry in India **2019**

***Note: The words are hyperlinked. Click on them to view linked material such as transcripts, publications, github, etc.**