

## --ACADEMIC QUALIFICATIONS

Year	Degree/Board	University/Institution	%/CGPA
2021*	Post Graduate Diploma in Business Analytics	IIM Calcutta, ISI Kolkata, IIT Kharagpur	8.60/10
2017	B.E. – Electrical Engineering	Jadavpur University	7.34/10
2013	Class XII, WBCHSE	Howrah Zilla School, Howrah	85%
2011	Class X, WBBSE	Howrah Zilla School, Howrah	83.75%

## AWARDS &amp; ACHIEVEMENTS

Scholastic Achievements	<ul style="list-style-type: none"> <li>Secured <b>99.16%</b>ile overall in <b>CAT 16</b> (~1.95L candidates); <b>GMR 352</b> in <b>WBJEE 13</b> (~1.1L candidates) '13</li> <li><b>Top 7.5%</b> (~1.17L candidates) in <b>GATE 17</b>; Achieved <b>100%</b> (<b>Board Topper</b>) in Mathematics, <b>WBBSE</b> '11</li> <li>Secured <b>AIR 198</b> in 14<sup>th</sup> National Science Olympiad by SOF (<b>State Rank 7</b> and <b>City Rank 1</b>) '12</li> </ul>
Business Competitions	<ul style="list-style-type: none"> <li><b>National Winner</b> out of <b>770+</b> teams in Cypher 1.0, an Analytics case study organized by <b>IIM Raipur</b> '19</li> <li><b>National Winner</b> out of <b>430+</b> teams in Constrat, the Annual case study event held by <b>SIOM Nashik</b> '19</li> <li><b>National Runner-Up</b> of Sumantran, a consulting case study event organized by <b>VGSOM, IITKGP</b> '20</li> <li><b>IIM Calcutta Campus Finalist</b> (1/5) of <b>Optum Stratethon</b>, a pan India <b>Strategy</b> event worth <b>2L prize</b> '19</li> <li><b>Winner</b> (75%ile globally) of <a href="#">Capsim Global Business Simulation</a> tournament held in IIM Calcutta '19</li> <li><b>National Finalist (Top 6)</b> of <b>HDFC Intelligent Banking</b>, a case challenge on AI-enabled banking '20</li> <li><b>National Finalist (Top 15)</b> in OpSPardha, an all India operations simulation tournament, by <b>SPJIMR</b> '20</li> </ul>
Data Science Competitions	<ul style="list-style-type: none"> <li><b>Ranked 2<sup>nd</sup></b> among <b>2.8K+</b> participants on game review sentiment analysis in AV's <a href="#">NLP Hackathon</a> '20</li> <li><b>Ranked 12<sup>th</sup></b> among <b>6334</b> participants on multi-class image classification challenge on <a href="#">HackerEarth</a> '20</li> <li>Currently ranked <b>367<sup>th</sup></b> (<b>Top 0.1%</b>) among <b>330k+</b> users; <b>Top 5 Contributors</b> in JantaHack Series in AV '20</li> <li>Secured <b>24<sup>th</sup></b> rank globally in <b>Microsoft</b> sponsored COVID-19 themed <b>Tweet Classification</b> challenge '20</li> <li><b>National Finalists (Top 8)</b> in <b>Astrazeneca AI Challenge</b> for pneumonia detection held at IIT Madras '20</li> <li><b>Top 1%</b> among <b>4796</b> participants in <a href="#">Forecasting Challenge</a> to predict electricity demand held on AV '20</li> <li><b>Top 5%</b> on business forecasting challenge among <b>6300+</b> participants in <b>LTFS FinHack 2</b> held on AV '20</li> <li><b>Ranked 1<sup>st</sup></b> in <a href="#">Zaloni Techniche Datathon</a>, a <b>Kaggle</b> in-class competition on ethnicity prediction '19</li> <li><b>National Finalist</b> in <b>HSBC Data Buzz</b>, a challenge to predict credit default organized by IIT Madras '20</li> </ul>

## WORK EXPERIENCE (24 months)

Decision Scientist	Mu Sigma Inc.	Bangalore (May '17 – May '19)
Avoidable Return Prediction using Intelligent Chatbot	<ul style="list-style-type: none"> <li>Developed a robust 4 tier <b>ensemble architecture</b> to predict future <b>avoidable returns</b> for a large OEM</li> <li>Revamped the existing NLP engine with <b>Word2Vec</b> embeddings to get 10% improvement in <b>F1 Score</b></li> <li>Redesigned Chatbot backend using <b>Docker</b> following <b>microservices approach</b> to achieve high scalability</li> <li>Generated annual <b>cost saving</b> worth <b>\$60M</b> with <b>80% reduction</b> in turnaround time for new return requests</li> <li>Won <b>Spot Award</b> in the <b>debut</b> year for successfully managing the most <b>critical thread</b> in the project</li> </ul>	
Machine Learning Operationalisation	<ul style="list-style-type: none"> <li>Owned the workflow redesign of <b>model lifecycle management</b> tool as part of Mu Sigma <b>Labs</b> team</li> <li>Developed framework to manage algorithms in production and to enable model <b>deployment at scale</b></li> <li>Conducted <b>Market Research</b> to identify and leverage underserved industry needs worth <b>\$4B</b> by 2025</li> <li>Introduced features such as <b>Data Versioning</b>, real-time <b>Model A/B Testing</b> and <b>Kubeflow Pipelines</b></li> </ul>	
Statistical Process Control	<ul style="list-style-type: none"> <li>Created <b>R-Shiny Dashboard</b> to monitor <b>acceptance sampling</b> amongst various suppliers of vials</li> <li>Incorporated <b>Six Sigma</b> strategy to improve the <b>cost of quality</b> by <b>4%</b> for a global pharma giant</li> </ul>	

## ACADEMIC PROJECTS

Fair Reranking in LinkedIn Search	<ul style="list-style-type: none"> <li>Implemented a framework to quantify and mitigate <b>algorithmic bias</b> in <b>LinkedIn Recommendation</b></li> <li>Achieved <b>Demographics Parity</b> and <b>Equal Opportunity</b> with re-ranking of the original ranked list</li> <li>Validated <b>Fair algorithms</b> on simulated data to achieve min Skew of 0.05 with only 4% drop in NDCG</li> </ul>
Click Through Rate Prediction	<ul style="list-style-type: none"> <li>Predicted Click Through Rate for online advertising platform using 10 days worth of clickstream data</li> <li>Applied <b>KNN imputation</b> for missing values and conducted EDA using <b>Plotly</b> on <b>highly cardinal data</b></li> <li>Built <b>Wide and Deep Model</b> using <b>Tensorflow</b> to compare with <b>Logistic Regression</b> and <b>Random Forest</b></li> <li>Achieved a <b>Log Loss</b> of 0.46 using <b>mean encoded</b> features on the Avazu CTR data in <b>Kaggle</b> (Top 80%)</li> </ul>
DataTree – A novel Data Visualisation	<ul style="list-style-type: none"> <li>Conceptualized <b>novel visualization technique</b> to capture <b>summary statistics</b> of <b>Univariate Data</b></li> <li>Captured information of <b>Histogram</b> and <b>Box Plot</b> combined and received the <b>highest grade</b> of 9.5/10</li> </ul>
Object Detection and Image Classification	<ul style="list-style-type: none"> <li>Created <b>Realtime Image Classification</b> and <b>Object Detection</b> model to detect facemasks on humans</li> <li>Applied <b>Transfer Learning</b> to train <b>MobileNet V2</b> and <b>YOLO V3</b> architectures on <b>web scraped</b> data</li> <li>Achieved <b>96%+ validation accuracy</b> on classification and an overall <b>mAP</b> of 0.813 on detection approach</li> </ul>
Epidemic Modelling Using Agent Based Simulation	<ul style="list-style-type: none"> <li>Created <b>Agent Based Model</b> to simulate COVID-19 spread and its economic impacts with <b>SEIR</b> model</li> <li>Crafted a <b>Markov Chain</b> based interactive framework to visualize the effect of <b>policy interventions</b></li> <li><b>Prescribed</b> recommendations on effective intervention method for the modeled <b>Complex System</b></li> </ul>
Time Series Model	<ul style="list-style-type: none"> <li><b>Forecasted</b> hourly traffic for a period of seven months based on three year and one month of past data</li> <li>Conducted <b>Dickey Fuller test</b> for <b>stationarity</b>; Determined the seasonal order via <b>ACF</b> and <b>PACF</b> plots</li> <li>Dealt Multiple Seasonality with <b>TBATS</b>; used <b>FB Prophet</b> to include holidays as exogenous variables</li> </ul>

	<ul style="list-style-type: none"> <li>Converted Daily Level <b>SARIMA</b> forecasts to an hourly level based on <b>Average Historical proportions</b></li> </ul>
Seller Negotiation Tool	<ul style="list-style-type: none"> <li>Deployed a <b>simulation framework</b> to aid bilateral negotiation process using alternating offers protocol</li> <li>Used <b>Linear Utility function</b> to find <b>Pareto optimal solution</b> for the <b>Multi-Objective Optimization</b></li> </ul>
Fairness in Clustering	<ul style="list-style-type: none"> <li>Introduced fairness in <b>Clustering Algorithms</b> with each point belonging to multiple protected groups</li> <li>Utilized <b>IBM CPLEX Studio</b> library to solve <b>integer programming problem</b> for fair reassignment</li> <li>Used <b>T-SNE</b> to visualize clusters and obtained fairness cost within 15% of <b>theoretical lower bound</b></li> </ul>
<b>ADDITIONAL PROJECTS</b>	
Football Match Winner Prediction	<ul style="list-style-type: none"> <li>Used <b>GaussianNB</b> classifier on <b>PCA</b> extracted features engineered from Team and Player attributes</li> <li>Improved accuracy by <b>Voting ensemble</b> of <b>Linear SVM</b> and <b>XGBoost</b> post hyperparameter tuning</li> </ul>
Game Review Sentiment Analysis	<ul style="list-style-type: none"> <li>Used <b>Transfer Learning</b> on pre-trained <b>RoBERTa</b> with <b>Mixed precision training</b> to classify reviews</li> <li>Utilized <b>Progressive Unfreezing</b> and <b>Differential Learning Rate</b> to achieve <b>F1 score</b> of 0.94 (2<sup>nd</sup> in LB)</li> </ul>
<b>CO-CURRICULAR ACTIVITY</b>	
Certifications	<ul style="list-style-type: none"> <li>ML with TensorFlow on GCP <b>specialization</b> by <b>Google</b>; Business Analytics <b>specialization</b> by <b>Wharton</b></li> <li>Neural Network &amp; DL Course by <b>Andrew Ng</b>; Supervised Learning with <b>Scikit Learn</b> in <b>Datacamp</b></li> </ul>
<b>POSITIONS OF RESPONSIBILITY AND EXTRACURRICULAR ACTIVITIES</b>	
General Secretary, Convolution 2016, Jadavpur University	<ul style="list-style-type: none"> <li>Led a <b>team of 50+</b> students to organize annual Tech Fest achieving <b>74% YOY increase</b> in participation</li> <li>Introduced <b>two new events</b> witnessing over 300 participants from <b>20+ colleges</b> across West Bengal</li> <li>Managed <b>budget worth INR ~2L+</b>; Spearheaded sponsorship collection and promotional campaigns</li> </ul>
JU Science Club	<ul style="list-style-type: none"> <li>Acted as a <b>Core member</b> functional in organizing 3+ events throughout the year across the campus</li> </ul>
Make A Difference	<ul style="list-style-type: none"> <li>Mentored underprivileged <b>orphan</b> kids as an Ed Support Member of <b>award-winning</b> non-profit NGO</li> </ul>
Texas Instruments Innovation Challenge	<ul style="list-style-type: none"> <li>Reached <b>Quarter Finals</b> of <b>Texas Instruments Indian Design Contest</b> representing our University</li> <li>Created <b>YouTube Video</b> of the final project generating 5K+ views as Top 10 watched in the contest</li> </ul>
<b>TOOLS &amp; LANGUAGES:</b> Python, R, MS Excel, SQL, Tableau, Plotly, PyTorch, Scikit-Learn, Docker, Kubernetes, GCP, AWS	
<b>ELECTIVES:</b> Healthcare Analytics, AI and Ethics, Complex Networks, Pricing and Revenue Optimisation, Decision and Games	