



## EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2025	M.TECH Dual Degree 5Y	IIT Kharagpur	7.48 / 10
2019	Senior Secondary Examination (BSER)	Navoday Bal Sr Sec Sch, Kaithoon (Kota)	78.40%
2017	Secondary Examination (BSER)	Navoday Bal Sr Sec Sch, Kaithoon (Kota)	92.67%

## INTERNSHIPS

Data Science Intern   Think Turbo	May' 2024 - Jul' 2024
<b>Objective:</b> Development of a property recommendation system using content-based filtering and hybrid methods	
• Developed a recommendation system using <b>TfidfVectorizer</b> & <b>cosine similarity</b> , boosting user engagement with personalized suggestions	
• <b>Engineered features</b> like location, price, and interactions to improve accuracy, integrating hybrid methods for targeted recommendations	
• Visualized property data using <b>Seaborn</b> and <b>Folium</b> , creating interactive maps and <b>scatter plots</b> to present property trends and insights	

## COMPETITION/CONFERENCE

American Express Campus Challenge 2024   Predict The Winner of The T20 Cricket Match	Mar' 2024 - Jul' 2024
<b>Objective:</b> Developed a machine learning pipeline using gradient-boosting algorithms to predict T20 cricket match outcomes	
• <b>Engineered &amp; optimized features</b> from match, batsman, & bowler datasets, significantly enhancing the model's predictive performance	
• Created over 30 features, and performed <b>hyperparameter tuning</b> , regularization, feature selection, and <b>normalization</b> of the data	
• Utilized <b>CatBoost model</b> in ensemble mode, achieving <b>72% accuracy</b> and successfully ranked in the <b>top 20</b> teams among 423 teams	
Data Analytics   General Championship   IIT Kharagpur   Silver Winner	Feb' 2024- Mar' 2024
<b>Objective:</b> Developed a predictive model to classify health risks, facilitating better decision-making and policy formulation	
• Filtered & selected features using <b>Pearson Correlation</b> , <b>VIF</b> , <b>Random Forest</b> feature importance metrics for effective data preprocessing	
• Explored & implemented clustering methods, including <b>K-means</b> , <b>GMM</b> , <b>DBSCAN</b> & <b>HDBSCAN</b> to optimize datasets for LLM performance	
• <b>Fine-tuned LLM</b> such as gemma-2b-it, Llama2-7b-chat-hf & Mistral-7B classified outputs into categories using <b>bert-base-uncased model</b>	
Data Analytics   General Championship   IIT Kharagpur   Gold Winner	Feb' 2023 - Mar' 2023
<b>Objective:</b> Develop a predictive model to classify quality of manufactured units using periodic sensor data from an manufacturing process	
• Analysed <b>periodic sensor data</b> from an advanced automated manufacturing unit to predict quality of manufactured products accurately	
• Applied <b>ablation study</b> to compare the relative importance of different sensors in accurate prediction of the final state of the products	
• Successfully ensembled best-performing time series, <b>DL</b> , and <b>AutoML</b> models - <b>LSTM</b> , <b>1D CNN</b> , and AutoGluon to achieve <b>94% accuracy</b>	

## PROJECTS

Multilingual Health Query Retrieval System   Self Project	May' 2023 - Jul' 2023
<b>Objective:</b> Developed a multilingual health query retrieval system using BERT and custom dataset for precise health information retrieval	
• Developed a custom dataset by scraping the 1mg website using <b>Selenium</b> , capturing patient FAQs and corresponding doctor prescriptions	
• Successfully Classified drugs into five disease categories using <b>K-means clustering</b> , improving dataset structure and classification accuracy	
• Implemented <b>BERT</b> for optimal information retrieval performance, building a <b>web app</b> for efficient query ranking & prescription retrieval	
Multiple PDF ChatBot   Generative AI, LangChain   Self Project	Sep' 2023 - Nov' 2023
<b>Objective:</b> Developed a PDF chatbot using RAG, FAISS, and GPT-4 for efficient query responses and extended interactions via LangChain	
• Implemented retriever & generator model architecture to efficiently <b>encode</b> , <b>retrieve</b> , & precisely respond to queries from uploaded data	
• Explored Facebook AI Similarity Search( <b>FAISS</b> ) for efficient semantic search and <b>GPT- 4</b> as a reliable natural language response generator	
• Integrated the <b>LangChain</b> Framework, leveraging <b>ConversationalSummaryMemory</b> for prolonged conversation and user interactions	

## SKILLS AND EXPERTISE

<b>Language/Tools:</b> Python   C++   C   SQL   VS Code   XCode   Git   Github   Jupyter Notebook   Google Colab   MS Office   OpenSearch
<b>Frameworks/Libraries:</b> C++ STL   NumPy   Pandas   Scikit-learn   Tensor Flow   Keras   Streamlit   LangChain   Seaborn   Matplotlib

## CERTIFICATIONS

Amazon ML Summer School	Sep' 2023 - Oct' 2023
• Completed a <b>4-week course</b> , mastering <b>8 modules</b> , including Supervised Learning, Deep Neural Networks, & Dimensionality Reduction	
• Acquired practical skills in Unsupervised Learning, Probabilistic Graphical Models, Sequential Learning, and Reinforcement Learning	
AZ-201: Applied Algorithms and Data Structures   AlgoZenith	Apr' 2022 - Sep' 2022
• Completed <b>16-week</b> training in <b>Data Structures &amp; Algorithms</b> , Probability & Statistics, Object-Oriented Programming, Operating Systems	
• Solved <b>300+</b> problems, achieving <b>80%</b> proficiency, and actively participated in internal contests, showcasing continuous improvement	

## COURSEWORK INFORMATION

• Algorithms	• Machine Learning Foundations and Applications	• Linear Algebra and Complex Analysis
• Programming & Data Structures	• Advaced Learning Paradigms for Artificial Intelligence	• Probability & Statistics
• Advanced Calculus	• Artificial Intelligence for Cyber Physical Systems	• Entrepreneurship Essentials

## POSITIONS OF RESPONSIBILITY

Captain   Illumination   Radhakrishnan Hall of Residence	Jul' 2023 - Nov' 2023
• Led & managed a <b>300</b> -student team for <b>45 days</b> , demonstrating composure, adaptability, and decision-making in high-pressure situations	
• Coordinated cross-functional collaborations with Theme, Design, Garden, Oil, and Presentation teams to enhance operational efficiency	
• Successfully secured a the prestigious <b>Bronze</b> medal through strategic planning and thorough execution during the intense competition	