RAJEEV LOCHAN JOSHI

linkedin.com/in/rajeev-joshi/
Github: Rajeev1815

Email: joshirajeev1815@gmail.com
Mobile: +91-7668659003

Education

- **Indian Institute of Technology (IIT), Kharagpur** — West Bengal, India
  Dual Degree (B.Tech+M.Tech) - Mechanical & Financial Engineering ; GPA: 9.04/10 — December 2020 - Present
- **BLM Academy, Haldwani** — Uttarakhand, India
  Class 12, Central Board of Secondary Education (CBSE); Score: 96.8% — May 2019
- **Himalaya Inter College, Chaukori** — Uttarakhand, India
  Class 10, Uttarakhand Board; Score: 95.2% — May 2017

Internships Experience

- **Microsoft Corporation - Software Development Intern** — May'23 - July'23
  Objective: Enabling Natural Language Query Searches in Windows Copilot
  - Enhanced search capability to **120%** for Windows Copilot by developing & integrating natural language search feature
  - Implemented Windows Search Architecture using **C++/ WinRT** & achieving **10%** reduction in search execution time
  - Achieved **99.5%** accuracy in utilizing **Windows SQL**,Advanced Query Syntax to retrieve & manipulate data in Copilot
- **Generative Adversarial Networks (GANs) Image Colourization** — Sept'21 - Jan'22
  Supervisor: Prof. Sanand Dilip Athlaye, IIT Kharagpur
  - Utilised **GANs** for image colorization with **TensorFlow**, **PIL**, and **scikit-learn** leveraging a game theory approach
  - Developed the generator with encoder-decoder **UNet** architecture and the discriminator with **soft labels** training
  - Deployed **Adam optimizer** for optimization of generator and discriminator generating images from grayscale inputs
  - Added Peak Signal-to-Noise Ratio **(PSNR)** & Structural Similarity Index **(SSIM)** for assessment of colorization quality

PROJECTS

- **Predictive Modeling using Recurrent Neural Networks (RNN)** — Jan'23 - Mar'23
  Supervisor: Prof. Buddhananda Banerjee, IIT Kharagpur
  - Developed S&P500 **predictions** based on **Single & Multiple Linear Regression** models & using **4** global indices'
  - Leveraged **5+** models including **SARIMAX** garnering **98.53%** accuracy & **98.91%** accuracy deploying **LSTM** model
  - Harvested the conditional volatility & mean returns using the **EGARCH** model using **Monte Carlo** simulation
- **Augmented Reality Superimposition with Computer Vision** — Oct'22 - Nov'22
  Objective: Real-time image augmentation of input image on user video with computer vision
  - Performed stepwise object detection, object tracking, and feature matching with **OpenCV** library for computer vision
  - Deployed the **Oriented FAST & Rotated BRIEF** detector to detect key points and **FLANN** for feature matching
  - Augmented the desired image on input with **homography matrix** using perspective-transform and warp-perspective
- **Data Visualisation and Prediction Web Application** — May'22 - Jun'22
  Objective: Development of a web application for Exploratory Data Analysis
  - Developed a web application using **streamlit** & **ReactJS** to produce data driven insights & was deployed on **Heroku**
  - Designed app with accuracy of **96%** using best of **Random Forest Algorithm**, Decision Tree & **Linear Regression**
  - Garnered an accuracy of more than **80%** for a variety of customised data-set inputs with **15+** vivid kinds of plots
- **Natural Language Processing (NLP) Research Paper Summarizer** — Jan'22 - Feb'22
  Objective: Summarizing research papers using hugging face transformers
  - Created a research paper summarizer based on natural language processing **(NLP)** using Hugging Face **Transformers**
  - Leveraged transformer's **Tokenizer** & AutoTokenizer, **AutoModelForSeq2SeqLM** functions with **NLTK** library
  - Deployed the **BERT**, **BARD**, **DistilBART**, T5, and Pegasus transformer model to develop research paper summarizer

Scholastic Achievements

- Secured **13th** rank in State Boards and was awarded by **Chief Minister** of Uttarakhand for Academic Excellence
- Ranked among **top 1.5%** out of 2 lakhs in JEE-Advanced 2020 & **top 0.2%** out of 8.5 lakhs in JEE-MAIN 2020
- Secured department change with CGPA of **9.39** at end of first year, being within **top 3%** of students of 2020 Batch

Relevant Coursework

- **Mathematics:** Probability & Statistics, Regression Analysis & Time Series, Advanced Calculus, Linear Algebra and Numerical & Complex Analysis, Partial Differential Equations, Transform Calculus, Operations Research, Real Analysis
- **Analytics:** Machine Learning Foundations & Applications, Supervised Learning (Regression & Classification), Advanced Learning Algorithms, Unsupervised Learning, Recommenders & Reinforcement Learning, Neural Networks & Deep Learning

Skills Summary

- **Programming Languages:** C, C++, Python, MySQL, R, MATLAB, HTML, CSS, ReactJS
- **Libraries** NumPy, Pandas, Matplotlib, Cufflinks, Plotly, TensorFlow, Keras, Seaborn, Cufflinks, Scikit-learn, Selenium
- **Softwares** Git, Hadoop, AWS, Jupyter Notebook, VS Code, Anaconda Distribution, Power BI, Tableau, Bloomberg Terminal