

# RISHAV KUMAR RAJAK

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## EDUCATION

**B.Tech and M.Tech, Integrated Course**, Indian Institute of Technology Delhi July 2018 - June 2023  
Major: Chemical Engineering, Minor: Business Management, CGPA: **8.294/10.0**

**Intermediate, Central Board for Student Education**, DAV Bistupur March 2017 - May 2018  
Physics, Chemistry, Mathematics, Computer Science and English, Percentage: **89.2 %**

## SKILLS

<b>Languages</b>	Python, Java, C++, PySpark, SQL, MATLAB, Javascript, HTML, CSS, $\text{\LaTeX}$
<b>Softwares</b>	SAS, Hive, Git, Jupyter, VS Code, AWS, MS Excel, Power BI, Azure, Hadoop, MapReduce
<b>Libraries</b>	Keras/Tensorflow, Pytorch, NumPy, Pandas, Matplotlib, Scikit-Learn, NLTK, OpenCV

## EXPERIENCE

**Data Science Intern**, Axis Bank (Business Intelligence Unit), Bengaluru, India June 2022 - July 2022

- Extracted **50** features of **33 million** live customer base and performed data preprocessing in a **SAS** environment
- Performed feature selection using **Pearson Correlation** and **Random Forest** Feature Importance on **Pyspark**
- Contrived a complete ML pipeline and implemented **Weighted Logistic Regression** for class-imbalanced data
- Achieved an **AUC ROC** score of **0.761** and computed customers' propensity to invest in **Term Deposits**

**Research Intern**, All India Institute of Medical Science Delhi, New Delhi, India May 2021 - July 2021

- Developed **CNN** architectures like **UNet**, **Double UNet**, and **cGAN** for Left Ventricle Segmentation of Heart
- Conducted preprocessing of DICOM files, used augmentation strategies to increase dataset, attained **0.96 DSC**
- Built an **interactive workspace** using ipywidgets for **manual contouring** and volume calculation of the LV

## PROJECTS

**Medical Image Translation and Segmentation Using Neural Networks** (Thesis) [\[Link\]](#) Jan 2022-June 2023

- Developed **cGAN** model for MyoPS data, attained segmentation DSC of **0.709** and **0.711** for edema and scar
- Implemented **cycleGAN** and **UNETR** for unpaired image translation and segmentation on crossMoDA dataset
- Created a novel modality-conditional-based **diffusion model** that outperformed **GANs** in image translation

**Movie Insight Dashboard and Recommendation System** (Power BI, Python) [\[Github\]](#) April 2023

- Built an interactive **Power BI Dashboard** with DAX measures, filters, slicers, etc. to analyze MovieLens data
- Created an advanced movie recommender with embedding-focused neural design, yielding a **0.91** accuracy rate
- Assessed **Neural Collaborative Filtering** and optimized model performance through **data parallelization**

**Simulation and Automation of Processes in a Restaurant** [Prof. Mausam] (Java) [\[Github\]](#) April 2021

- Constructed **minHeap**, **AVL Tree**, and **Deque** data structures to manage the status of burgers and customers
- Computed the **customer**, **griddle state**, **average waiting time**, etc, with efficient time and space complexity

## POSITIONS AND EXTRA-CURRICULAR ACTIVITIES

- **Dalal Street, IIT Delhi: Winner**, amongst top **50** teams in stock trading with virtual money April 2022
- **Coordinator, eDC IIT Delhi**: Led a team of **20** and acquired sponsorship deals for the conclave 2021
- **Quantify Capital: Winner**, amongst **60+** other teams in the analysis of potential stocks of India Jan 2020

## SCHOLASTIC ACHIEVEMENTS

- **MHRD Scholarship**: Received grant from the GoI and acquired **PG teaching assistantship** 2022-2023
- **Research Award**: Received a **significant** contribution towards research award from ChemE Society 2023
- **Nordic Machine Intelligence**: Published a proceeding at **MedAI**, Medical Image Segmentation task 2021
- **NURF Fellowship**: Awarded Notre Dame Nanoscience and Technology fellowship, **twice** in a row 2020-2021