Riya Chauhan

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EDUCATION

Indian Institute of Technology,Mandi **2022-2024**
M.sc. - Applied Mathematics *CGPA-7.00*

University of Delhi **2019-2022**
B.sc.(H) - Mathematics *CGPA-8.979*

CBSE **2016-17**
Class-12 PCM *Percentage-91%,Among Top 10 in District*

CBSE **2015-16**
Class-10 *CGPA-10*

COURSEWORK / SKILLS

- Linear Algebra
- Operation Research
- Probability and statistics
- Pattern recoginition
- foundation of C

WORK EXPERIENCE/RESEARCH EXPERIENCE

Junior Research Fellow

Supervisor: Prof. Ravikrishna Elangovan,Department of Biochemical engineering and Biotechnology, IIT Delhi, India

- Annotate and preprocessed images using tools like Fiji/ImageJ and Label Studio.
- Collaborated with AIIMS Delhi,ICMR-RMRC Dibrugarh pathologists to understand their specific requirements for the model, ensuring it aligns with real-world medical applications.
- Worked closely with software engineers on this interdisciplinary project, integrating domain expertise with technical implementation for model development.
- Collaborated with Ph.D. scholars at IIT Delhi to gain insights into the morphological characteristics of cervical and malaria-infected cells.
- Conducted research on the CELL-GAN model, which demonstrated high accuracy in cell detection, particularly in cases of overlapping cells.
- Developed a cell detection Model using YOLO11m-obb(Oriented Boundary Box) with higher accuracy.
- **Technologies:** Python Basics, PyTorch, Fiji,Vertex AI

PROJECTS

Image Compression Using Haar Wavelet | Python,haar wavelet algorithm,Huffmann algorithm

- **Overview:**Developed an efficient image compression tool using the Haar wavelet transformation and Huffmann coding to reduce image file sizes while maintaining quality.
- **Performance metrics:**Achieved significant reduction in file size with minimal loss in image quality,as evaluated by metrics such as PSNR(Peak-Signal-to-Noise Ratio

M.sc. Thesis

Supervisor: Dr. Amulya Kumar Mahto,Mehta Family, IIT Guwahati, India

Project Title: EXPLORING DOMAIN TRANSFER APPROACHES FOR MEDICAL IMAGE ANALYSIS

Deep Domain Confusion | CUDA,Pytorch,,Alexnet,MMD Loss

- Successfully integrated MMD loss into the DDc framework to improve domain alignment and model generaliztion across different domains.
- Evaluated model performance using cross-domain validation techniques and metrics such as accuracy,precision,recall and F1-score.

Correlation Alignment for Deep Domain Adaptation | Pytorch,Matplotlib,Numpy,Resnet18

- Integrated CORAL into the domain adaptation pipeline,resulting in enhanced feature alignment between source and target domains.
- Conducted experiments to assess the impact of CORAL on reducing domain shift and improving target domain performance.

TECHNICAL SKILLS

Languages: Basics of Python,Basics of C,R,Ms-Excel,Basics of SQL
Developer Tools: VS Code,Spyder,Google COlab,GCP(Vertex AI)
Area Of Interest: Machine Learning,Deep Learning,CNN,Fine Tuning,Optimization,Object Detection, Image Classification,MaskR-CNN,FasterR-CNN, Semantic and Instance Segmentation
Data Visualization Tools: Seaborn,Matplotlib

CERTIFICATIONS

- IIT JAM MA - AIR-446