Kunal Purkayastha

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Education

B.Tech(Information Technology)	Sikkim Manipal Institute of Technology, CGPA: 9.43	2020-2024
Higher Secondary	Kendriya Vidyalaya Silchar, Percentage: 70.6%	2020
Secondary	Kendriya Vidyalaya Silchar, Percentage: 75.83%	2018

Skills

AI/ML: Computer Vision, Convolutional Neural Network, Transformers, Image Processing
Python Libraries: PyTorch, Tensorflow, openCV, Numpy, Django, Tweepy
GUI Design using Python
Environment: Familiar with Windows and Linux work environment

Familiar Languages

C(Advanced), C++(Advanced), Python(Advanced), Java(Intermediate), HTML(Advanced), CSS(Advanced), SQL(Intermediate), JavaScript(Intermediate)

Projects

Bulk SMS Sender	Software for ONGC officers using FAST2SMS API	2022
Biopsy-AI	Multi-cancer classification software, GSC '23	2023
Multiclass Skin Cancer Classifier	GUI software using Intel optimized Python and Tensorflow	2023
DITS	A model for domain independent text spotting	2023
DATR	A model for domain agnostic text recognizer	2024
Auto-X	X bot to summarize a paragraph using LLM and post it on X using X-APIv2	2024

Professional Experience

Industrial Training - I, ONGC AAFB-EA (July 2022)
Built a Python app for ONGC officers to send bulk SMS.

Research Intern, Indian Statistical Institute, Kolkata (June-August 2023)
Developed a model for domain independent text spotting.

Research Intern, Indian Statistical Institute, Kolkata (January-May 2024)
Developed a model for cross-family text spotting for spotting text across family of license plates and person ReID datasets.

Fellowship(s)

Comprehensive and Holistic Advancement of National Knowledge Yield and Analytics (CHANAKYA) fellowship *an initiative under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) of the Government of India.* - **(January, 2024 - August, 2024)**
Project title: A Novel Approach for Cross Family Text Spotting on Family of License Plate Datasets and Person Re-ID Datasets

Pending Publications

DATR: Domain Agnostic Text Recognizer (Accepted - ICPR 2024)
Kunal Purkayastha, Shashwat Sarkar, Umapada Pal, Palaiahnakote Shivakumara, Palash Ghosal

DITS: Domain Independent Text Spotter (Accepted - ICPR 2024)
Kunal Purkayastha, Shashwat Sarkar, Umapada Pal, Palaiahnakote Shivakumara, Palash Ghosal

Compound Attention Embedded Dual Channel Encoder-Decoder for Multiple Sclerosis Lesion Segmentation from Brain MRI (Under Revision - Journal of Multimedia Tools and Applications)
Palash Ghosal, Abhijit Roy, Rohit Agarwal, Kunal Purkayastha, Aaditya Lochan Sharma, Amish Kumar

Enhancing Document Image Binarization through Domain Adaptation with Transformer Cross-Attention (Under review - Journal of Pattern Analysis and Applications)
Palash Ghosal, Kunal Purkayastha, Amish Kumar, Swalpa Kumar Roy

Swin-ResNeST: A CNN-Transformer Based Hybrid Model for Skin Image Lesion Segmentation (Under review - ICTDsC2024)
Aaditya Lochan Sharma, Kalpana Sharma, Kunal Purkayastha, Palash Ghosal

Automated Multi-Class Brain Glioma Segmentation Using 3-phase Cascaded mLinkNet with Dense Concatenated Connections (Under review - ICTDsC2024)
Ashis Datta, Kunal Purkayastha, Palash Ghosal, Rustom Ali Ahmed, Hiren Kumar Deva Sarma

PIRNet: Two-step Deep Neural Network for Segmentation of Brain MRI with Efficient Loss Functions (Under review - ASCIS2024)
Ashis Datta, Kunal Purkayastha, Palash Ghosal, Rustom Ali Ahmed

Neonatal Brain MRI Segmentation Using Deep Concatenated Residual Learning (Under preparation)
Swati Kanchan, Palash Ghosal, Lokesh Nandanwar, Amish Kumar, Anup Sadhu, Jayasree Chakraborty, Debashish Nandi, Kunal Purkayastha

An Enhanced Deep Neural Network for Automatic Classification of Alzheimer's Disease (Under preparation)
Palash Ghosal, Kunal Purkayastha, Ashis Datta, Amish Kumar

Certifications

ISI Kolkata	Research internship - II completion	2024
ISI Kolkata	Research internship - I completion	2023
Intel oneAPI hackathon	3rd position; project on multiclass skin cancer classifier	2023
IBM CV0101EN	Computer Vision and Image Processing Fundamentals	2022
Video Editing	Certificate for editing videos of SMIT's online cultural fest	2021
Archinova'18	Runner-up at NIT Silchar technical fest	2018

Participations

Intel oneAPI hackathon	3rd position; multiclass skin cancer classification	2023
Google Solution Challenge 2023	Multicancer classification model (Biopsy-AI)	2023
TechAdrishta Exhibition	Showcased a model for brain lesion segmentation	2023
International workshop on Machine and Data Analytics		2024

Leadership and Extracurriculars

Taught DSA	: to 40+ students on behalf of Forum2k club (IT, SMIT)
Technical Secretary	: Forum2k, departmental club (IT, SMIT)
Head of Information & Technology	: IEEE, Student branch, SMIT