BHARATHICHAUDHURY

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EDUCATION

M.S by Research | *Computer Science And Engineering*	Jan 2020 – Jan 2023
IIT Kharagpur, West Bengal	CGPA: 9.55/10
B.Tech | *Computer Science And Engineering*	Aug 2014 – May 2018
Rajiv Gandhi University of Knowledge Technologies, Nuzvid, Andhra Pradesh	CGPA: 8.44/10
PUC | *Major: Maths, Physics, Chemistry*	Jul 2012 – May 2014
IIIT Nuzvid, Andhra Pradesh	CGPA: 7.88/10
Class X	May 2012
Govt. High School Sompeta, Andhra Pradesh	CGPA: 9.8/10

EXPERIENCE

AI Engineer, IBM — Aug 2023 -present

Bangalore, India

- Designed and implemented an Ask Resume Chat Bot, integrated with IBM WatsonX platform, enabling efficient matching of job descriptions with resumes. This solution utilizes LLMs to analyze and filter through thousands of resumes.
- Developed a generative AI model for a chat assistant capable of handling the multimodal graphs and text data. Finetuned the model on the Large Language Vision Assistant (LLaVA) model.
- Designed an email classification framework utilizing the IBM WatsonX generative AI platform where the emails are classified, An AI system was developed to analyze the content of the emails and check for compliance against specified rules
- Implemented a RAG Based Model for Documents classification to classify the user Queries based on the category type the queries.

Machine Learning Engineer, Xaana.Ai — May 2023 - Jul 2023

Canberra, Australia (Remote)

- Working on multimodal image compression, text compression and audio compression using generative AI models.
- Working on deploying edge based machine learning models to production and developing novel machine learning solutions for edge computing.

Research Intern, IBM Research Bangalore — Feb 2023 – Apr 2023

Mentors: Dr. Laura Wynter, Dr. Penny Chong

- Title: Multimodal Learning of Audio, Video and Images in time series analysis
- Worked on fusing audio, video and image features, done in a virtual mode with IBM Research Singapore Team.
- Designed a knowledge distillation multiclass framework incorporating unimodal audio features and unimodal image features distilled into the multimodal network consisting of unimodal teacher models and multimodal student network.
- The resulting network surpassed the state-of-the-art unimodal network results by 20%

Research Fellow, Indian Institute of Technology, Kharagpur — Aug 2019 - Nov 2022

Sponsor: Indian Space Research Organization

- Title: Deep Learning-based Crop Classification and Crop Phenological Stage Monitoring using Multi-Sensor and Multi-Temporal Data
- The developed model is envisioned to be used by ISRO for Indian Agricultural fields over 179.8 Mha (9.6 percent of the global net cropland area).
- Developed Crop Sense: Calibrated Mobile Application for crowdsourcing of crop information for crop monitoring. Achieved a RMSE rate of 2.21 for percentage cover estimation between spectroradiometer and proposed tool.
  Copyright filed. Patent Granted No - 453338, India

PUBLICATIONS

- Penny Chong, Laura Wynter, Bharathi Chaudhury, "MultiModal Deep Learning with Boosted Trees For Edge Inference" , https://doi.ieeecomputersociety.org/10.1109/ICDMW60847.2023.00021,**Workshop on Multi-Modal Data Analysis, International Conference in Data Mining 2023**,
- Bharathi Chaudhury, Anand S Sahadevan, Pabitra Mitra, " Agricultural Field Boundary Delineation From Multi-Temporal IRS P-6 LISS IV Images Using Multi-Task Learning ", https://ieeexplore.ieee.org/document/10064490, **IEEE MIGARS 2023**
- Bharathi Chaudhury, Vasudha Joshi, Anand S Sahadevan, Pabitra Mitra, "Study of Deep Convolutional Neural Networks for Leaf Counting", https://creds.iitpkd.ac.in/static/pdfs/wspa_chaudhury.pdf,**Workshop on Precision Agriculture, PAKDD - 2021** ,
- Bharathi Chaudhury, Vasudha Joshi, Anand S Sahadevan, Pabitra Mitra, "Multi Task Learning for Plant Leaf Segmentation and Counting ", https://ieeexplore.ieee.org/document/10101308, **IEEE APSCON 2023**
- Bharathi Chaudhury, Anand S Sahadevan, Pabitra Mitra, "Multi-task Hybrid Spectral-Spatial Temporal Convolution Networks for Classification of Agricultural Crop Types and Growth Stages Using Drone-Borne Hyperspectral and Multispectral Images", https://doi.org/10.1117/1.JRS.17.038503, **SPIE Journal of Applied Remote Sensing**
- Anand S Sahadevan, Bharathi Chaudhury, Pabitra Mitra, Arundhati Misra Ray, "System And Method For Controlled And Precise Determining Of Instantaneous-Field-Of-View Of Spectroradiometer", **Patent Granted No - 453338, India**
- Bharathi Chaudhury, Anand S Sahadevan, Pabitra Mitra, "Automated Crop Field Boundary Delineation in Multitemporal LISS4 Imagery", **IEEE Geoscience and Remote Sensing Letters** (Under Review)

MAJOR PROJECTS

MS Thesis: Deep Learning for Agricultural Field Monitoring using Multisensor Images
Supervisor: Prof. Pabitra Mitra, IIT Kharagpur
- This thesis aims to automate leaf counting, leaf segmentation, agricultural field parcel delineation, object-based crop type classification and crop growth stage monitoring from satellite images using deep learning.

Crop Sense: Calibrated Mobile Application for crowdsourcing of crop information for crop monitoring
Guide: Dr. Anand S Sahadevan, ISRO., Prof. Pabitra Mitra, IIT Kharagpur
- Developed Calibrated Android tool for crowd-sourcing of crop information. Achieved a RMSE rate of 2.21 for percentage cover estimation between spectroradiometer and proposed tool.

SCHOLASTIC ACHIEVEMENTS

Selected for Google Research Week 2023

Research Fellowship from Indian Space Research Organization(ISRO)

Research Fellowship from Defense Research and Development Organization(DRDO)

Recieved Travel Grant for presenting my work at IEEE APSCON 2023, Bangalore

Recieved Travel Grant for presenting my work at IEEE MIGARS 2023, Hyderabad

LANGUAGES AND TECHNOLOGIES

Python (NumPy, SciPy, Matplotlib, Pandas), C, C++, Tensorflow, Pytorch, Devops, Cassandra, SQL, Git, Google Colab, Jupyter, Rasterio

SKILLS

Machine Learning, Multimodal Learning, Deep Learning, Computer Vision, Remote Sensing, Object Detection, Semantic Segmentation, Multi-Task Learning, Generative AI, Kafka, Cassandra

REFERENCES

Prof. Pabitra Mitra, Professor, Dept. of Computer Science and Engineering, IIT Kharagpur

Dr. Anand S Sahadevan, Scientist D, SAC, Indian Space Research Organization

Dr. Laura Wynter, Senior Manager, IBM Research Singapore

COURSE WORK INFORMATION

Machine Learning	Deep Learning	Artificial Intelligence	Advanced Digital Image Processing
Statistical Learning	Probability & Statistics	Discrete Mathematics	Algorithms