Ujan Pradhan

Phone: +91-8100631422 / +91-8015684902 — Email: pradhanujan2003@gmail.com / up0625@srmist.edu.in
Location: Chennai, TN, India — LinkedIn: LinkedIn — GitHub: GitHub — Portfolio: Portfolio

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Education

- **SRM Institute of Science & Technology** (2022-2026)
  B.Tech Computer Science — Chennai, TN, India
- **Delhi Public School, South Kolkata (Joka)** (2020-2022)
  Class 12 Boards (PCM) (CBSE) — Kolkata, WB, India
- **Vivekananda Mission School, Joka, Kolkata** (2006-2020)
  Class 10 Boards (ICSE) — Kolkata, WB, India

Skills

- **Programming Skills:** C,C++,Java,Python,R
- **Web Development Skills:** HTML,CSS,JavaScript,ReactJS,NodeJs,APIs
- **Machine Learning & Data Science Skills:** NumPy,Pandas,Scikit-learn,TensorFlow,PyTorch,Seaborn Keras,Matplotlib,Deep Learning,Computer Vision,Neural Networks,Natural Language Processing,Image Processing
- **Other Technical Skills:** SQL,Power BI,Tableau,MATLAB,Packet Tracer,Computational Networking
- **Tools:** Canva,GitHub,IO App,Microsoft Office(Word,Excel, PowerPoint),Wix,Vercel,LaTeX
- **Soft Skills:** Public Relations,Presentation,Sponsorship,Digital Marketing,Team Management,Student Affairs
- **Languages:** English,Bengali,Hindi

Experience

Indian Institute of Technology Roorkee (IIT-R) — Roorkee, UK, India

Research Intern (May 2024 - Present)
Working as a Research Intern in the field of Deep Learning & Medical-Image Processing under Dr. Millie Pant, HoD, Dept. of Applied Mathematics & Scientific Computing.

Samsung R&D Institute India — Bengaluru, KA, India

R&D (PRISM) Intern (Dec 23-)
Working on Worklet No. 23OD33 **"Voice Emotion Identification Engine"** under the guidance of Mr. Rohit Kumar (Senior Engineer at SRI-India) and Dr. S. Chinnaswamy & Dr. Pradeep S. (Assistant Professors, Dept. of Computing Technologies, SRMIST)

National Institute of Technology Karnataka (Surathkal) (NIT-K) — Mangaluru, KA, India

Research Intern (Dec 23-Jan 24)
Worked on Machine learning-based phishing website detection and URL-based feature extraction with 94% accuracy under the supervision of Dr. Jaidhar CD, ex-HOD & Associate Professor, Dept of Information Technology

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Extracurricular Activities

- **IEEE SRMIST Student Branch** — Chennai, TN, India
  R&D Domain Member & Computer Society Member (Mar 23-)
- **SRM Electronics Club** — Chennai, TN, India
  Machine Learning Domain Member (Jan 24-)
- **Hybrutos Racing** — Chennai, TN, India
  Web-Developer & Corporate Member (Jan 23-Jan 24)

Projects

1. **3D Brain Tumor Detection Using Vision Transformers and Explainable AI**

   Brain tumor detection using Vision Transformers (ViT) for highly accurate image analysis, combined with Explainable AI (XAI) techniques such as Grad-CAM, LIME, and SHAP to provide transparency and interpretability in predictions. A U-Net model is employed for precise segmentation of brain tumors, while advanced 3D visualizations, dynamic colored graphs, and GIFs are used to enhance the representation of tumor regions

2. **Minimal NeRF Implementation with JAX and Flax**

   Implementation of Neural Radiance Fields (NeRF) using the JAX and Flax libraries. NeRF is a technique for generating 3D scene representations from 2D images by modeling how light interacts with objects to create photorealistic renders

3. **Emotion Recognition from Audio Speech**

   Speech Emotion Recognition (SER) model using LSTM layers,NLP techniques and deep learning to classify speech recordings into 6 emotions(fear,angry, disgust,neutral,sad, happy).

4. **Video Anomaly Detection**

   It is a video-processing project using DenseNet121 Transfer Learning to detect 14 categories of abnormal situations in video with an accuracy of 91.53 %.

5. **Agro Tech Nexus**

   Developed an all-in-one solution for farmers, including crop-price prediction, weather alerts, cold-storage information, market access transportation, a tool marketplace, and chat-bot/phone-based assistance.

Publication

1. **Ujan Pradhan**, M.N. Aditya, Dr. Rajkumar R. *Analyzing Land Submergence Impact on Temperature Using Random Forest Regression and Explainable AI Techniques*. Accepted for presentation at *ACOIT'24*, 2024. Proceedings to be published in *IEEE Xplore*.
2. **Ujan Pradhan**, M.N. Aditya *Handwriting Improvement Using Optical Character Recognition and Reinforcement Learning*. Accepted for presentation at *IEEE TALE*, 2024. Proceedings to be published in *IEEE Xplore*.

Honours & Awards

- Google Developer Society Wow 23 Hackathon,Chennai Runners-Up
- IEEE SRM SB TechTrack 24 Hackathon Winner
- Smart India Hackathon 23 Internal Round Finalist, SRM Hackathon 7.0 Finalist
- Academic Scholarship from SRM University
- Qualified Pre-Regional Mathematical Olympiad (PRMO) & National Talent Search Examination Stage-I from WB-State List