Avinash Dhiran

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Work Experience

- Project Intern, InfiCorridor Solutions Pvt. Ltd., Mumbai   August 2024 – August 2025
    - Project Title: Analysis of SAR Data for Enhancing Land-Cover Classification using Meta-Heuristic Optimizations
    - **Research** based project**,** in collaboration with **ISRO**
    - Extraction and classification of **L-Band ALOS-2 PALSAR PolSAR data**
    - Employed **ACO** for feature selection and **PSO** for tuning **Random Forest**, achieving up to 12% accuracy improvement
    - Utilized of **GA** for feature set reduction, achieving up to 15% increased accuracy
    - Implemented **transfer learning** for land-cover classification
- Teaching Assistant, Department of Electronics and Telecommunications, VIT, Mumbai   January 2025-April 2025
    - Course: **Digital Image Processing (Semester 6)**
    - Responsibilities: Project mentoring, Assignment designing and evaluation, Lab work
- Chanakya Fellowship Program, Mumbai   April 2023-December 2024
    - Grant: 12 Lakhs INR by Department of Science and Technology (DST), Government of India
    - Institution: TIH Foundation for IoT & IoE (TIH-IoT), IIT Bombay
    - **Project Lead (2023-2024)**
        - Project Title: Design and Development of a Real-Time Multilingual Sign Language Translation Application
        - Led a team of 5 project fellows
        - Deployed **MediaPipe** and **FCNN** model for hand sign recognition with more than 98% accuracy
        - Used MediaPipe, **SCNN** and **Bi-LSTM** model for hand gesture recognition with 96% accuracy
        - Designed and developed a web application using **HTML**, **CSS** and **Java Script** for real-time translation
    - Project Fellow (2022-2023)
        - Project Title: Design and Development of an Onion Harvester
        - Designed and fabricated a fully functional small scale manually operated onion harvester
        - Functionalities: Soil loosening, Onion uprooting, systematic collection
        - Utilized **AutoCAD** and **Sketch-up** for designing and visualization

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Publications

- **Real-Time Hand Gesture Recognition System Using Mediapipe, Spiking Convolution Neural Network and Bi-LSTM**, International Conference on Electronics, Computing, Communication and Control Technology (ICECCC 2025)**,** Bengaluru, India.
- **Real-Time Static Hand Sign Recognition System using MediaPipe and Fully Connected Neural Network**, International Conference on Innovative Trends in Information Technology (ICITIIT 2025), Kottayam, India.
- **Polsarhub: A Large-Scale Repository for PolSAR Data**, IEEE India Geoscience and Remote Sensing Symposium (InGARSS 2024), Goa, India.
- **MATSAR: A Comprehensive Machine Learning Approach for PolSAR Data Processing**, International Journal of Computer Applications (IJCA), 2025.
- **Copyright**, Government of India**: Computer Software for CAN Satellite** - Embedded C, December 2021

Projects

- Land-Cover Classification of PolSAR Data using **Ant Colony Optimization** for Feature Selection and **Particle Swarm Optimization** for Hyper Tuning Random Forest's Parameters
- PFNO-SAR: A Physics-Informed **Fourier Neural Operator** for PolSAR De-speckling
- Analysis of **GAN**-Based De-speckling for PolSAR Data
- Comparative Analysis of **Frequency-Domain Filters** for Speckle Reduction in PolSAR Imagery
- **Transfer Learning** Based Approach for PolSAR Image Classification
- PolSAR Image Classification using **Probabilistic Adaptive Genetic Algorithm** for Feature Optimization

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Education

- **Master of Science**, Faculty of Geo-Information Science and Earth Observation (**ITC**), **University of Twente**, Netherlands   2025-2027
    - Major: **Geo-Information Science and Earth Observation**
- **Bachelor of Engineering**, Vidyalankar Institute of Technology (VIT), **University of Mumbai**, India   2021-2025
    - Major: **Electronics and Telecommunication**
    - Minor: Artificial Intelligence and Machine Learning
    - CGPA: 8.68/10

Skills

- **Technical Skills:** MATLAB, Python, C++, Embedded C, ENVI, Google Earth Engine, Technical writing, Image Processing, Machine Learning, Remote Sensing, Algorithm Development, AutoCAD, LT-Spice, KiCAD, Sketch-Up, Cadence, Latex, Arduino
- **Soft Skills**: Leadership, Project Management, Event Management, Team Management, Public Speaking, Adaptability, Teaching