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**
  - Specialization: **GEO-AI** (Remote Sensing Specialist)
- **Bachelor of Engineering**, Vidyalankar Institute of Technology (VIT), **University of Mumbai**, India
  2021-2025
  - Major: **Electronics and Telecommunication**
  - Minor: Artificial Intelligence and Machine Learning

Skills

- **Technical Skills:** MATLAB, Python, C++, Embedded C, R, HTML, CSS, Java Script, QGIS, ENVI, PolSAR Pro, SNAP, Google Earth Engine, AutoCAD, LT-Spice, KiCAD, Sketch-Up, Cadence, Latex, Arduino
- **Soft Skills**: Leadership, Project Management, Event Management, Team Management, Public Speaking, Adaptability, Teaching