

Jugal Alan

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EDUCATION

Indian Institute of Technology, Ropar

Master of Technology in Artificial Intelligence

2024 - 2026

Punjab, India

Visvesvaraya Technological University

Bachelor of Engineering in Computer Science

2019 - 2023

Karnataka, India

ACHIEVEMENTS

Orion Master Grant

Université de Lorraine

2026

Nancy, France

- Selected for a fully funded Master-level research grant to conduct international research on UAV autonomy using SLAM-driven localization, planning, control, and reinforcement learning.

Graduate Aptitude Test in Engineering (GATE)

2024

- Ranked in the top 1 percent in India's National level Engineering Entrance Exam for Computer Science.

PROJECTS

Multi UAV Flood Area Coverage and Coordination

July 2025 - Present

Master's Thesis Project - Dr. Shashi Shekhar Jha

Github

- Built a pose-driven orthomosaicing system that extracts 6-DoF pose directly from drone EXIF metadata (GPS and gimbal IMU) and generates orthomosaics at 22 FPS on textureless surfaces where feature-based SLAM fails.
- Designed an incremental Pose Graph Optimizer that corrects 2–5 m consumer GPS drift by SIFT-matching overlapping frames, unprojecting correspondences to the ground plane, and solving a sparse least-squares system at O(n) amortized cost.

Pixel2Prescription

Sep 2025 - Nov 2025

Natural Language Processing

Github

- Developed a vision foundational model to classify plant species and detect diseases leveraging large-scale plant imagery and self-supervised pretraining. The model uses ViT for visual classification front-end and is linked to a knowledge base/language model back-end which generates farmer-friendly diagnostic reports and treatment recommendations.

Papaya Seed Adulteration Detection in Black Pepper

Jan 2025 - May 2025

Agricultural Cyber Physical Systems

Github

- Built and annotated a custom dataset of 1,277 high-resolution images (pure black pepper, pure papaya seed, adulterated in varying quantity) to train and validate a YOLOv8s object detector. Achieved 88.99% mean seed detection accuracy (MSDA) on adulterated test samples.

EXPERIENCE

Deccan AI

Jan 2026 - Present

AI Data Consultant

Remote

- Evaluated and improved large AI models through RLHF and supervised fine-tuning, contributing to high-quality training data for enterprise AI systems.

IIT Ropar

Jun 2024 - Present

Teaching Assistant

Punjab, India

- Mentored students in the Tinkering Lab on embedded systems and prototyping using Arduino microcontrollers.
- Conducted technical sessions on AI and UAV systems for Indian Army personnel, selected for Junior Research Fellowship.

GlowTouch Technologies

Feb 2023 - May 2023

Intern

Mangalore

- Worked as a web advisor for hostgator.com, a web hosting platform. Debugged deployment, cloud hosting and domain configuration for 40% of daily US based clients. Recognized as the overall top performer among graduate engineering trainees.

Take It Smart PVT LTD

Sep 2022

Machine Learning Intern

Bangalore

- Led a 4-person team to create a desktop application that utilizes convolutional neural network to colorize grayscale images and detect objects using yoloV4.

SKILLS & CREDENTIALS

- Simulation, Robotics & Vision:** AirSim, Gazebo, ROS2, OpenCV, YOLOv8, Visual SLAM

- Languages & Tools:** C/C++, Python, Bash, PostgreSQL, Git, Docker, Flask

- AI & Machine Learning:** Numpy, Pandas, Scikit-learn, PyTorch

- Publication - IJCRT:** Image Colorization and Detection Using Machine Learning, 2023

- Certifications - FreeCodeCamp:** Scientific Computing with Python, Relational Database, Responsive Web Design