

OMKAR SHRIKANTH

Undergraduate Researcher, AI and Computational Economics – BITS Pilani Goa Campus

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Dual-degree scholar at BITS Pilani (CGPA: 9.39/10.0) with expertise in building and deploying AI systems at scale. Specializing in multi-agent systems, computer vision, robotics, and AI-driven automation.

EDUCATION

Birla Institute of Technology and Science (BITS) Pilani, K.K. Birla Goa Campus

Aug 2023 – Present

M.Sc. Economics + B.E.(Hons) Computer Science – Integrated Dual Degree Program

- **Cumulative GPA: 9.39/10.0** – Ranked in top 3% of cohort
- **BITS Merit Scholarship Recipient** – Awarded for exceptional academic performance

TECHNICAL SKILLS

- **Programming:** Python, C++, React, JavaScript, Java, C, MATLAB
- **AI/ML:** AI Agent Frameworks, Hugging Face Transformers, LangChain, OpenCV, Stable Diffusion
- **Computer Vision:** YOLOv8, OpenPose, L2CS, UNET Model, Image Processing, 3D Reconstruction
- **Specialized:** LLM Fine-tuning, RAG Systems, 3D Reconstruction (Gaussian Splatting, NeRF), Time Series Analysis
- **Robotics:** ROS 2, Gazebo, Multi-Agent SLAM, Motion Capture, Intel RealSense, Arduino, ESP32, Raspberry Pi, Teensy, NVIDIA Jetson, 3D Printing, Laser Cutting, Electronics
- **Tools:** Docker, AWS, Git, Linux, Blender, LaTeX, AutoCAD, Fusion 360

MAJOR PROJECTS & RESEARCH EXPERIENCE

LegalEaze AI – AI Platform for Legal Industry

Co-founder & Technical Lead | Recognized Startup

Aug 2024 – Present

Website: legaleazeai.com

- **Built comprehensive AI platform** tested with judges, lawyers, and legal professionals across India
- **Architected hierarchical RAG (Retrieval-Augmented Generation) system** indexing all of India's court cases and legal documents with custom embeddings
- **Developed multi-agent LLM framework** for automated case intake, argument generation, precedent discovery, and legal document drafting using fine-tuned models on Indian legal corpus
- **Created intelligent workflow automation** for case management and legal research assistance
- **Implemented conversational AI interface** for natural language queries on complex legal matters
- **Winner of Ideathon 2024** with cash prize; Recognized by BGIIES

Nagar Rakshak – Multilingual AI Agents for Police Departments

Lead AI Architect | Goa Police Department

Sep 2024 – Oct 2024, Sep 2025 – Present

AI Agent Platform

- **Designed AI agent platform** for Goa Police serving both officers and citizens at police stations
- **Built multilingual NLP pipeline** supporting Hindi, English, Marathi, Kannada, and low-resource Konkani dialect
- **Developed dual-interface AI agent system:**
 - Citizen agents: Rights guidance, automated FIR filing, and report generation
 - Police agents: Preliminary investigation support with secure database access
- **1st Place Winner, Goa Police Hackathon 2025** – INR 50,000 prize
- **Felicitated by Chief Minister and Director General of Police** of Goa

SWARM Robotics Platform – Distributed Multi-Agent Coordination System

Project Lead | Electronics & Robotics Club, BITS Goa

Jan 2025 – Present

Open-Source Research Project

- **Engineered custom motion capture system** under \$50
- **Developed active and passive IR marker system** for unique drone identification and tracking

- **Worked on swarm coordination platform** handling intrinsic/extrinsic camera calibrations and multi-drone state estimation
- **Implemented and benchmarked algorithms** for formation control, collaborative construction, and multi-agent SLAM using both centralized and decentralized approaches
- **Researching novel RGB-based localization methods** using custom ESP32 drones with onboard cameras
- **Investigating Gaussian Splatting techniques** for real-time 3D scene reconstruction and collaborative mapping

6-DOF Robotic Arm – Intelligent Chess-Playing Robot

Lead Developer | Electronics & Robotics Club, BITS Goa

Jan 2024 – Sep 2025

Open-Source Project

- **Led complete development pipeline:** CAD design, simulation, 3D printing, assembly, and automation
- **Implemented computer vision pipeline** using Intel RealSense D435i stereo camera for depth perception and board state recognition
- **Fine-tuned YOLOv8 model** on combined dataset of real and synthetic chess images, achieving **around 85% piece classification accuracy**
- **Transitioned to SO-100 arm** for Vision-Language Model (VLM) integration and reinforcement learning research

Project Athena – 3D Cricket Player Tracking System

Developer | Quidich Innovation Labs

Feb 2025

24-Hour Hackathon Project

- **Developed multi-camera 3D tracking system** for live cricket broadcasts during ICC World Cup
- **Built complete computer vision pipeline:** 2D keypoint detection (OpenPose) → 3D triangulation → Blender model generation
- **Achieved robust player tracking** under heavy occlusion using custom YOLO-based player identification
- **Implemented close to real-time processing pipeline** for broadcast-quality 3D visualization

PROFESSIONAL EXPERIENCE

AI Research Intern

KVGA Technologies Ltd. | Smart-QnA Platform

May 2025 – Jul 2025

Full-time Internship

- **Developed Agentic Interview Platform** with conversational AI for automated resume screening and candidate evaluation
- **Built multimodal cheating detection system** using YOLO for face detection and L2CS model for gaze tracking, achieving **94% accuracy** in detecting suspicious patterns across gaze, audio, and browser processes
- **Created KVGA Financial platform** with NLP-driven risk preference extraction from user conversations
- **Implemented portfolio optimization** using ARIMA models for price forecasting, technical indicators calculation, and comprehensive backtesting framework

TEACHING EXPERIENCE & ACADEMIC SERVICE

- **Teaching Assistant, B.Sc. Computer Science** – BITS Work Integrated Learning Programme (Aug 2024 – 2025)
Paid position mentoring 50+ working professionals in core computer science concepts
- **Teaching Assistant, Principles of Management** – BITS Pilani (Aug 2023 – Present)
Assisting with course delivery, grading assignments, and conducting tutorial sessions for 120+ undergraduate students

ACHIEVEMENTS, HONORS & AWARDS

- **1st Place**, Goa Police Hackathon 2025 (INR 50,000)
- **Winner**, Ideathon 2024 – Legal Tech Track
- **BITS Merit Scholarship** – Academic Excellence
- **Felicitated** by Goa Chief Minister & DGP

RESEARCH INTERESTS

Primary: Multi-Agent Systems, AI Agents, Computational Game Theory, Natural Language Processing

Secondary: Computer Vision, Distributed Robotics, AI Safety, Causal Inference, Human-Robot Interaction