Saad Imran

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PROFILE

To excel through hard work and dedication in a challenging environment, embracing opportunities for growth and learning, while applying my knowledge and experience to create impactful solutions and achieve professional excellence.

EDUCATION

College of Aeronautical Engineering (CAE), NUST — *Risalpur, Pakistan*

Bachelor of Engineering in **Avionics Engineering** — 2021 – 2025

- Relevant Coursework: AI & Computer Vision, RF & Microwave Engineering, Control Systems, Embedded Systems.

SKILLS

Machine Learning Frameworks: TensorFlow, PyTorch, Ultralytics (YOLO), Hugging Face (Transformers, BLIP), LLMs (Ollama, Gemma, DeepSeek), LangChain

Computer Vision and Media Processing: OpenCV, MediaPipe, Whisper

Data Science: NumPy, Pandas, SciPy, Scikit-learn, Matplotlib

Simulation & Engineering Tools: CST Studio Suite, Keysight ADS, MATLAB, Simulink

Soft Skills: Teamwork & Collaboration, Adaptability, Problem-Solving, Time Management

EXPERIENCE

National Aerospace Science & Technology Park (NASTP) — *Kamra, Pakistan*

AI/ML Engineer Intern — 14/04/2025 – 09/05/2025

- Trained custom YOLO models and deep learning classifiers (CNNs, RNNs, RBMs, Autoencoders) using TensorFlow/PyTorch for real-world computer vision tasks.
- Completed an internship project on Hand Gesture Recognition, structured a gesture recognition system with 16 gestures, achieving >90% classification accuracy in real-time testing, building a MediaPipe-based system with custom classifier and real-time audio feedback.

National Aerospace Science & Technology Park (NASTP) — *Islamabad, Pakistan*

Embedded Systems Engineer Intern — 07/10/2024 – 11/11/2024

- Developed and integrated embedded hardware systems using STM32 microcontrollers and the T2080 processor with multiple peripherals.
- Designed and tested custom PCBs in OrCAD for processor–peripheral interfacing and reliable hardware performance.

No.104 Aerospace Depot, PAF Base Nur Khan — *Islamabad, Pakistan*

Design Engineer Intern — 22/10/2023 – 10/11/2023

- Designed a solar-powered autonomous lawn mower using Arduino, integrating sensors and control logic for obstacle avoidance.
- Built and tested a working prototype, demonstrating reliable obstacle detection and improved energy efficiency in field trials.

ACHIEVEMENTS & CERTIFICATIONS

- **Deep Learning Using TensorFlow** – IBM Certified
- **NUST High Achiever Award 2024** – Semi-finalist in National Robotics Competition with over 50+ teams competing from all over Pakistan.
- **Winner, Sportsfest 2k25** – Going through 20+ sports events, securing 1st place at Sportsfest 2025 among 60+ candidates.

PROJECTS

Final Year Project – Adversarial Perturbation for Machine Vision Disruption Oct 2024 - Sept 2025

- Created Adversarial patches that were capable of fooling multiple object detectors (YOLO) using a single patch. The goal was to make a targeted class (person) invisible to the detection system while being clearly visible to the naked eye. Detectors were targeted in both the digital and physical domains.
- **AI-Powered Study Assistant (2025):** Created a chatbot for answering study queries, summarizing content, and assisting with research tasks.
- **Automated Lecture Notes Generator (2025):** Built an AI system using Whisper + LangChain to transcribe lectures and generate structured, concise notes.
- **Hand Gesture to Text & Speech (2025):** Implemented a MediaPipe + PyTorch-based system converting hand gestures into real-time text and audio feedback.
- **Safety Equipment Monitoring (2025):** Deployed an a YOLOv11 model for real-time detection of safety gear compliance in workplace environments with a GUI to mark zones.
- **Radar Cross Section Measurement (2024):** Conducted RCS analysis of 4 material samples across multiple frequencies in an anechoic chamber.
- **C-Shaped Microstrip Patch Antenna (2024):** Simulated, manufactured, and validated a patch antenna prototype in CST with performance verification using VNA.
- **Lange Coupler (2024):** Engineered a microwave coupler in ADS, fabricated, and validated functionality through VNA characterization.
- **Kalman Filtering on Twin Rotor MIMO (TRMS) System (2024):** Applied Kalman and Extended Kalman filters in Simulink for improved state estimation of TRMS dynamics.

REFERENCE

Available upon request.