

# VARDAN GARG



## CONTACT DETAILS

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## SKILLS AND TOOLS

- Programming Languages:** C, C++, Python, Java, HTML, CSS
- Frameworks:** Keras, TensorFlow, Langchain, LangGraph, Flask, OpenAI GYM, FastAPI, Flask, NodeJS, ReactJS
- Libraries:** Pytorch, OpenCV, Scikit-Learn, NumPy, Pandas, Matplotlib, Hugging Face, Scipy, Pygame
- Databases:** MySQL, MongoDB
- Development Tools:** Git, GitHub, VS Code, Anaconda, Vite
- General Tools:** MS Office Suite, Google Workspace, TechSmith Camtasia, OBS Studio
- Soft Skills:** Communication, Team Collaboration, Public Speaking, Leadership

## CERTIFICATIONS

- Specialization on Machine Learning and Deep Learning** guided by Mr. Andrew Ng on Coursera (deeplearning.ai)
- Design and Analysis of Algorithms** from IIT Madras on NPTEL with 96% Score
- Guided Project from Coursera on Traffic Sign Classification Using Deep Learning in Python/Keras and Support Vector Machines** with scikit-learn
- MathWorks - MATLAB Onramp**

## HOBBIES

- Enigmatic Plots in the Cinema**
- Crafting meals with passion**

## EDUCATION

Year	Degree / Board	Institute	CGPA/%
2024-26	M.Tech in IT (Machine Learning and Intelligent Systems)	Indian Institute of Information Technology, Allahabad	8.91
2018-22	B.Tech in (Computer Science and Engineering)	University Institute of Technology, RGPV, Bhopal	8.44
2017-18	Intermediate - 12 <sup>th</sup> Board (CBSE)	Gyan Ganga International Academy, Bhopal	87.8%
2015-16	Matriculation - 10 <sup>th</sup> Board (CBSE)	Ryan International School, Bhopal	10

## SCHOLASTIC ACHIEVEMENTS

- ★ Secured **AIR 66 (GE)** in **NIC Recruitment** (Advt. **NIELIT/NIC/2023/1**) for **Scientific Officer** Appointed as **District Informatics Officer (DIO)** at **Rajgarh Collectorate of M.P. [2025]**
- ★ Ranked in **Top 3.8% nationwide** in **GATE (CS/IP)** with a normalized **Score of 519 [2024]**
- ★ Attained **100% MMVY scholarship** based on **class 12th Merit** for **BTech in CSE [2018-22]**
- ★ Achieved **Zonal Rank 28** in the **International Cyber Olympiad** organized by **SOF [2015]**
- ★ Secured **Zonal Rank 64** in the **International Maths Olympiad** organized by **SOF [2015]**

## EXPERIENCE

- Magnet Brains, Bhopal | AI/CS Faculty | EdTech Educator [Jul,2021–Feb,2023]**
- ★ Grew **YouTube channel** to **8.52M+ subs** & **100M views** utilizing targeted **EdTech** content
  - ★ Educated **100K+ students** in **AI (Grade 9–10)**, **CS (Grade 11–12)** & **CUET** via coursework
  - ★ Engaged **500+ students** concurrently, resolving doubts with **32K views** in **real-time**
  - ★ Drove **45% engagement boost** & **30% subscriber growth** via analytics-driven strategies
- Persistent Systems, Nagpur | Software Trainee Intern [Feb 2022–Aug 2022]**
- ★ Collaborated with cross-functional teams under the **Agile** framework to plan and deliver project goals, participating in sprint planning, stand-ups, and retrospectives
  - ★ Honed **effective communication, cross-functional collaboration, learning agility, strategic thinking, feedback receptiveness** & **active listening** in this 6-month internship

## PROJECTS

- 🔗 **VoiceNote AI | Full Stack Voice/Text Note App (Collaborative) [2025]**  
**Tech Stack** – React, FastAPI, JWT, SQLite, ChromaDB, Gemini API, Speech-to-Text
- ★ Engineered a note-management backend with **JWT authentication** using HS256 algorithm (HMAC SHA-256) for token signing & verification, adaptive **CRUD functionality**
  - ★ Integrated advanced **semantic search** using **all-MiniLM-L6-v2 embeddings** & a **vector database** to retrieve notes with > 60% **cosine similarity** from extensive user collections
  - ★ Implemented smart **AI summarization** via the **Gemini Flash-2.5** model enabling features like intelligent **note retrieval, automated content summarization** & **PDF exports**
- 🔗 **Optimized Multi-UAV Search and Localization (Research) [2025]**  
**Supervision**– Dr. Munnendra Ojha, AIMS Lab, Department of IT, IIIT Allahabad  
**Tech Stack**– Python, OpenAI Gym, OpenCV, Qiskit, stable\_baselines3, numpy, pandas
- ★ Developed hybrid Genetic Algorithm & Quantum RL system for UAV victim detection
  - ★ GA waypoints cut 70% RL exploration; managed wind/obstacles/battery via PPO/DQN
  - ★ Quantum Reinforcement Learning outperformed classic RL by 3.5× faster convergence
  - ★ Demonstrated 95% coverage which is 30% faster than A\*/BCD/ACO in 64x64 simulation
- 🔗 **PTX-Accelerated Fused Conv2D Layer with TF Integration (Personal) [2025]**  
**Tech Stack**– CUDA, PTX, GEMM, PyTorch Extension, TensorCore Opt, cuBLAS
- ★ Engineered PTX-optimized GEMM kernel achieving 12% higher throughput vs cuBLAS (FP16, 2048<sup>2</sup> matrices) via shared memory conflict elimination & Tensor Core utilization
  - ★ Fused Conv2D + ReLU + BN: 4.2x speedup vs PyTorch naive layers (ResNet-50 blocks)
  - ★ PyTorch prod op: 63% MobileNetV3 latency reduction on A100 GPUs via integration
  - ★ Open-sourced with CI/CD performance regression pipeline validated against cuDNN