# AMOGH GUPTA

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## Education

**Indian Institute of Information Technology Pune**　　　　　　　　　　　**Aug 2021 – June 2025**
*Bachelor of Technology in Computer Science Engineering*　　　　　　　　　　　*CGPA:9.10*

- Consistently ranked among the top 3 out of 175 students, reflecting academic excellence and commitment.

**Indian Institute of Information Technology Pune**　　　　　　　　　　　**Aug 2023 – June 2025**
*Honors in Machine Learning **(1st in Batch)***　　　　　　　　　　　*CGPA:9.75*

## Work Experience

**Stealth AI Startup**　　　　　　　　　　　**Aug 2024 – Present**
*Co-Founder*　　　　　　　　　　　*Pune, India*

- A dynamic startup focused on integrating artificial intelligence into semiconductor products while offering tailored AI-driven solutions to clients across sectors such as technology and education.
- Serve as the AI face and lead in explaining AI concepts during meetings, understanding client needs related to AI.
- Develop prototypes for client demos, including tools like call summarization, product recommendation bots, and chatbots.

**Ernst and Young**　　　　　　　　　　　**May 2024 – Aug 2024**
*Data and GenAI Intern*　　　　　　　　　　　*Pune, India*

- Worked on business and technical solutions for Fortune 100 clients driven by Generative AI. Gaining experience in cross-functional teams and technology consulting.
- Developed a chatbot by implementing a **RAG Pipeline for over 10,000 documents** and improved search efficiency by 200% by creating metadata filters to narrow the search from 10,000 documents to 50 documents.

**IIT Kharagpur**　　　　　　　　　　　**Apr 2024 – Aug 2024**
*Research Intern- Prompting and LLMs*　　　　　　　　　　　*Pune, India*

- Actively participated in red-teaming to identify and analyze safety limitations and vulnerabilities of LLMs.
- Implemented several chains of thought to develop and improve multiple strategies for enhancing the strength of LLM models and their ethical applications. Made custom Python scripts to evaluate outputs in an automated manner.
- Contributed towards generating new ideas for research, advancing the field, and supporting the project's objectives.
- Successful in jail-breaking ChatGPT, Gemini, Nous-Hermes, Mixtral Instruct, Cohere Coral, and many more LLMs using custom-made multilingual prompts and cross-evaluated the outcomes by multiple sentimental models from HuggingFace.

**IIT Indore**　　　　　　　　　　　**Jan 2024 – Apr 2024**
*Research Intern- Natural Language Processing*　　　　　　　　　　　*Pune, India*

- Contributed to an NLP project extracting critical information from disaster-related tweets by implementing advanced text summarization techniques, reducing a dataset of 3000 tweets to the crucial 40.
- Large language models and integer linear programming methods were used to increase the accuracy and efficiency of the summarization process.
- Engineered and participated in a flood detection project where we applied segmentation techniques to improve the classification outcomes and help identify and analyze the respective data for flooding.

**RCI-Defence Research and Development Organisation (DRDO)**　　　　　　　　　　　**July 2023 – Aug 2023**
*Machine Learning Intern*　　　　　　　　　　　*Hyderabad, India*

- Explored and used advanced tools like Splunk and Kafka to improve the system's security measures.
- Performed extensive log analysis and anomaly detection on over one million logs and located major outliers, which were then successfully reduced to a few hundred. This Proof of concept was further showcased to senior scientists to explore the possibilities for deployment in production.
- Applied the One-Class SVM, KMeans, and Isolation Forests ML algorithms to improve detection accuracy using TensorFlow.
- Developed a dynamic web application powered by HTML, CSS, JavaScript, Bootstrap, and Flask to support project implementation.

**Jio Platforms Limited**　　　　　　　　　　　**May 2023 – July 2023**
*Artifical Intelligence Intern*　　　　　　　　　　　*Mumbai, India*

* Worked on a project, 'Improving Operations with AI,' focusing on improving business operations using advanced AI techniques.
* Participated in designing and deploying recommendation algorithms, including Apriori, to enrich data-driven decision-making.
* Designed a web application that gives a very engaging overview of the implemented features, presented later to the key stakeholders, showing the possible impact of the conducted project on operational efficiency.

## Projects

**SchedMaster, IIIT Pune** | *React JS, Node.js, Express.js, MongoDB, Tailwind CSS*     **March 2024 – May 2024**
· Developed a comprehensive scheduling platform for IIITP, leveraging React JS, Node.js, Express.js, MongoDB, and Tailwind CSS. The platform streamlines the creation and management of schedules across various departments and semesters, ensuring efficient coordination among routine in-charges. Utilizing a **Genetic Algorithm for optimization**, the platform effectively handles a user base of over 1,000 students, delivering scalable and robust scheduling solutions.

**ScholarSync, IIIT Pune** | *MERN (MongoDB, Express, React, Node), Tailwind CSS, Socket IO*     **Dec 2023 – Jan 2024**
· Developed a centralized research collaboration portal using the MERN stack, Tailwind CSS, and Socket.IO, enabling cross-institutional collaboration among students and professors. The platform allows professors to post research opportunities and includes features like real-time chat, notifications for application updates, and dynamic profile management. Integrated a content-based recommendation system to suggest research papers based on user-entered keywords. All data is dynamically fetched through APIs for seamless user interaction.

**CareerVaani, IIIT Pune** | *HTML, CSS, Js, BootStrap, NLP, Supervised Learning, API, MongoDB* **Aug 2023 – Aug 2023**
· Created an AI-based career counseling application for high school students, leveraging HTML, CSS, JavaScript, Bootstrap for the front end, and NLP, and supervised learning for career predictions. The application uses sentiment analysis and supervised algorithms to analyze questionnaire responses and provide tailored career recommendations. MongoDB was used for data storage, and API integration facilitated seamless interactions between the front and back end.

## Publication

**"Animal Intrusion Detection Using Deep Learning Techniques", Amogh Gupta,** Manan Mangal, Sanjeev Sharma, **InCITe 2024.**
· Used Transfer Learning models like ResNet50 and EfficientNetB7 for animal classification. Applied it to a dataset with ten classes and over 25,000 images, achieving 98.52% accuracy. This paper aims to introduce a novel idea regarding the safety of humans in residential areas.

**"Traffic Sign Sensing: A Deep Learning Approach for Enhanced Road Safety", Amogh Gupta,** Manan Mangal, Krish Yadav, Prit Mhala, Sanjeev Sharma, **PrePrint, 2023.**
· Implemented state-of-the-art object detection models like YOLOv8 and YOLO-NAS for road sign detection to enhance road safety. Achieved a mAP value of 95.72%.

**"Detection of Fall Armyworm in Field Crops Based on YOLO", Amogh Gupta,** Prit Mhala, Sanjeev Sharma, **IEEE INDISCON 2024.**
· Implemented Deep Learning solutions for crop safety: Utilized YOLOv8 models to detect the fall armyworm pest, a significant threat to crop growth and food security in India.
· Achieved exceptional precision: Attained impressive mean Average Precision (mAP) scores of 78.6%, 80.6%, and 39.4% using YOLOv8l, YOLOv8m, and YOLOv8n, respectively, with the highest precision of 89.5% achieved by YOLOv8n.

## Technical Skills

**Technolgies**: Python, C/C++, TensorFlow, Pytorch, Deep Learning, Computer Vision, NLP, Java, Machine Learning, SQL, Generative AI
**Tools**: HTML5, CSS, JavaScript, BootStrap, Jquery, NodeJS, MongoDB, ExpressJS, Flask

## Leadership Roles

* Organized multiple festivals with the Entrepreneurship Cell at my college, Indian Institute of Information Technology Pune, attracting over **1,000 students from 11 countries**, showcasing the ability to lead and collaborate globally, **Oct 2023.**
* Led the Knightmares Chess Club at IIIT Pune and actively participated in Model United Nations, refining leadership and diplomatic skills while fostering a passion for global issues, **July 2022.**

## Community Involvement

* Played a crucial role in **administering over 20,000 vaccinations** during the COVID-19 pandemic, directly contributing to community health and safety by curbing the virus's spread, **Aug 2021.**
* Provided technical classes through Akshar Multipurpose Social Trust, significantly improving students' understanding of technology and digital trends, fostering confidence and competence in the digital world, **May 2024.**