

# Ashish Singh

+91-9320459871

ashishsingh1501@gmail.com

GitHub Profile

LinkedIn Profile

Area of Interest

Technical: *Computer Vision, Generative AI, AI Explainability*

Extracurricular: *Badminton, Hiking, Public speaking, Tutoring*

## EDUCATION

**Indian Institute of Technology, Roorkee**

2020 – 2024

*Bachelor of Technology in Chemical Engineering*

8.1/10

## EXPERIENCE

**Analyst 2 - Data Science**

June 2024- Present

*Accordion*

*Hyderabad*

- Pioneered geospatial analytics by harnessing satellite imagery, sales trends, and demographic insights to pinpoint high-opportunity regions for solar panel deployment.
- Integrated geospatial intelligence into a linear optimization model, identifying 500+ high-potential ZIP codes and driving strategic market expansion.
- Implemented data-driven workforce scheduling, boosting installation efficiency by 50% while cutting costs 40%
- Engineered advanced computer vision solutions (YOLO, Detectron) with semi-supervised learning to enhance solar panel detection, refining market segmentation and targeting accuracy by 34%.

**AI Research Intern - Deepfake Detection**

April 2024 - June 2024

*ConTrails.ai*

*Remote*

- Designed custom datasets utilizing deepfake generation models, including FaceSwap, LipSync, and Talking Head.
- Constructed a preprocessing pipeline that downloaded specific YouTube videos, standardized them to 25 fps, and cropped clips to focus on points of interest (POI).
- Created high-fidelity deepfake datasets using FaceFusion, Video Retalking, etc., enhancing model training.
- Utilized DeepFakeBench to fine-tune the Xception model, achieving 95% accuracy on the custom dataset.

**Python and Machine Learning Intern**

December 2023 - February 2024

*Swar Yantra Technologies Pvt. Ltd.*

*Remote*

- Used open-source LLMs and embedding models from HuggingFace to enhance document analysis capabilities.
- Leveraged Language Models for accurate extraction of specific fields from various document types.
- Refined prompt engineering techniques, improving document extraction accuracy by 20%.

**Decision Analytics Intern**

May 2023 - July 2023

*EXL Services*

*Remote*

- Delivered an automated data extraction pipeline using OCR and Regex, reducing manual processing time by 60%
- Integrated language models to develop personalized expense reports that support natural language querying.
- Hosted a web interface to improve user interaction with bank statements, streamlining data analysis processes.

## PROJECTS

**Gen AI-powered Business Development Assistant** | *Generative AI, Python, Streamlit, Faiss, Langchain*

*AI-powered Business Development Assistant for client insights, case study recommendations, and strategy automation*

- Built AI assistant analyzing 100+ sources to identify client pain points and engagement opportunities.
- Developed case study recommendation engine with an active feedback-driven chatbot optimizing solution matching
- Systematized PowerPoint reporting tool with Streamlit interface, reducing the manual effort from 40 to 2 hours weekly and automating strategy exports.

**The Vital Extraction Challenge** | *Computer Vision, Python, Pytorch, OpenCV, YOLO, Git*

*A computer vision model to extract 5+ key vital signs from an image of an ECG monitor in the wild.*

- Secured Silver medal in Inter-IIT Tech Meet 11.0 by achieving 93.26% accuracy in ECG vital sign extraction.
- Utilized advanced models, data augmentation, noise reduction, and semi-supervised learning, optimizing inference speed to 2.3 seconds on Google Colab CPU.

**Image Colorization Using Conditional GANs** | *Generative AI, Python, Pytorch, FastAPI, COCO dataset*

*A pipeline for colorizing black-and-white images using deep learning techniques.*

- Developed an automated image colorization model using Conditional GANs based on the Pix2Pix architecture.
- Optimized model performance through adversarial training, data augmentation, and hyperparameter tuning.

## TECHNICAL SKILLS

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**Languages:** Python, SQL, C/C++, MATLAB, JavaScript

**Developer Tools:** Git, Google APIs, VS Code, PyCharm, Streamlit, CVAT, Roboflow

**Libraries:** PyTorch, Transformers, Tensorflow, Numpy, Scikit-Learn, Regex, Pandas, LangChain

**Additional Courses:** Stanford Online: CS224n, CS229, Statistics 110: Probability, Data Mining for Business Intelligence.

## POSITIONS OF RESPONSIBILITY

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**Head, AI/ML Vertical** | *Artificial Intelligence and Electronics Society, IITR*

May 2023 - May 2024

*Headed a 60+ member AI/ML team, driving competition success and hands-on ML project development.*

**UGTA** | *Academic Reinforcement Program*

Jan 2022 - March 2022

*Provided guidance and mentoring to first-year students in MAN001 course*

## ACHIEVEMENTS

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**Silver Meda** | *Inter-IIT Tech Meet 11.0*

2023

*Secured 2nd place among 23 IITs in mid-prep PS of Inter-IIT Tech Meet 11.0*

**Gold Medal** | *Integration Bee*

2023

*Secured 1st place among 65 teams in Integration Bee 2023*

**Mentee** | *Amazon ML Summer School*

2023

*Ranked in the top 5% of Amazon ML Summer School participants*