

# Chirag Garg

+91-7000135742 | [chirag.garg.5293@gmail.com](mailto:chirag.garg.5293@gmail.com) | [in Chirag Garg](https://www.linkedin.com/in/Chirag Garg) | [chirag-garg9](https://github.com/chirag-garg9) | [Google Scholar](https://scholar.google.com/citations?user=...)

## EDUCATION

### • National Institute of Technology, Raipur

Bachelor of Technology in Computer Science and Engineering

◦ Overall CGPA: 8.23(till 5th semester)

2022-26

Raipur, India

## EXPERIENCE

### • CiSTUP @ IISc Bengaluru

AI Research Intern

May 2024 - July 2024

Bengaluru , India

- Worked on developing a **Deterministic Autoencoder Model** which is conceptually similar to VAE but free from variational inference.
- Contributed to deriving an **optimal constant stepsize for Adam** under which it **guarantees convergence**.

## PUBLICATIONS

### Published

#### • DIME: Deterministic Information Maximizing Autoencoder. *ICLR 2025 Workshop*.

Authors: Alokendu Mazumder, Chirag Garg, Tirthajit Baruah, Punit Rathore. [\[OpenReview\]](#)

### Under Review

#### • A Theoretical and Empirical Study on the Convergence of Adam with Exact Constant Step Size in Non-Convex Settings. *IEEE Transactions on Artificial Intelligence (Under Review)*.

Authors: Alokendu Mazumder, Rishabh Sabharwal, Bhartendu Kumar, Manan Tayal, Chirag Garg, Punit Rathore.

## PROJECTS

### • SmartDoorGuard: Enhanced Door Access System

15 March 2024

Advanced Security Measures



- **Dual Verification:** Integrates **number plate recognition** and **face recognition** for enhanced security.
- **Technological Integration Utilizes YOLOv8** for number plate recognition, **Arcface** for face recognition, and **MongoDB** for efficient database management .

### • PotholeVision: Smart Road Rehabilitation Solution

1st November 2023

Revolutionizing Road Maintenance: Cutting-edge software for pothole detection, depth estimation, and 3D modeling.



- Engineered a robust software solution for real-time pothole detection and depth assessment using SOTA Algorithms.
- **Technologies Used:** YOLOv8, Arcface, MongoDB, React, Firebase, etc.

## SKILLS

- **Programming Languages:** Python, C/C++.
- **Technologies:** Sklearn, Tensorflow, Torch, Flask OpenCv, Pillow
- **Mathematics:** Linear Algebra, Probability, Statistics, Calculus
- **Concepts:** Computer Vision, Deep Learning, Optimization.

## POSITIONS OF RESPONSIBILITY

### • Core in Technical Domain

21st November 2023 – Current

Robotix Club (Offical Robotics club of NIT Raipur)

- Lead teams for creating multiple awesome projects showcased in Robofest.

### • Executive in Vigyaan Domain

August 2023 – June-2024

(Technocracy (Official technical committee of NIT Raipur))



- Helped in making problem statements for our Vigyaan Science Exhibition.
- Worked in hosting Vigyaan science Exhibition in Aavartan(Techfest Hosted by Technocracy) .

## ACHIEVEMENTS

- **AIR 129** in GATE DA 2025 and **AIR 822** in GATE CS 2025
- Problem statement winner in Codeutsava 8.0 organised by Team TCP(NIT Raipur)