# Hitesh Kumar

Junior Undergraduate
Computer Science and Engineering
IIT Gandhinagar

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## ACADEMIC DETAILS

| Degree | Specialization | Institute | Year | CPI/% |
|--------|----------------|-----------|------|-------|
| B.Tech. | *B. Tech.* | IIT Gandhinagar | 2022-Present | 8.86 |
| Class XII | *Physics, Chemistry, Maths* | N.M. International School | 2020-2021 | 98.8 |
| Class X | | N.M. International School | 2018-2019 | 92.67 |

## PROJECTS

- **Local Hosting Quiz App (Ongoing)** [May '24 - Present]
  *(Prof. Balagopal Komarath, IIT Gandhinagar) | Project Link*
  - Developing a Quiz App, featuring question locking functionality during quizzes with automated and manual modes.
  - Implemented a system to verify attendance in the lecture hall, granting quiz access to students accordingly.
  - Enhanced user interface accessibility for a broader audience while maintaining a visually appealing design.

- **Sampling and Sketching Methods for Novel Matrix Factorization** [March '24 - April '24]
  *(Prof. Anirban Dasgupta, IIT Gandhinagar) | Project Link*
  - Led a team of three in applying Non-Negative Matrix Factorization to sampled and sketched matrices, utilizing both Alternating Least Squares and Gradient Descent techniques for data compression.
  - Achieved 73% data recovery from factorized matrices (with 30% sampling initially).
  - Successfully implemented an algorithm from a research paper from Yahoo, getting notable results.

- **Autonomous Maze Solving Micromouse** [Jan '24 - April '24]
  *(Prof. Anirudh Mali, IIT Gandhinagar) | Project Link*
  - Led a team of two to create an autonomous maze-solving robot using the maze solving FloodFill Algorithm.
  - Coded the FloodFill Algorithm, ensuring successful simulation performance and optimal maze solution.
  - Contributed to the architectural design of the Micromouse during the design phase of the project.

- **Machine Learning Project** [Jan '24 - April '24]
  *(Prof. Nipun Batra, IIT Gandhinagar) | Project Link*
  - Implemented Machine Learning models, including Decision Trees, Regression Models, MLPs, CNNs, KNN etc.
  - Applied fine-tuning techniques for improving model performance on project-based problem statements.

- **Transient Heat Analysis of Car Brake System** [Jan '24 - April '24]
  *(Prof. Dilip Srinivas Sundaram, IIT Gandhinagar) | Project Link*
  - Simulated the Heat Flow through Car Brake during the time when brake is applied using Numerical Method.
  - Implementated the Finite Difference Method and designed the Poster for the Final Presentation of the Project.

## TECHNICAL SKILLS

- **Programming Languages:** Python, C++, HTML, CSS, Verilog, MATLAB
- **Tools:** VSCode, Autodesk Inventor, Vivado, AutoCAD, DipTrace, Ultimaker, Laser Cutting
- **Libraries:** Numpy, Matplotlib, Seaborn, PyTorch, TensorFlow, Scikit-Learn, etc.

## ACHIEVEMENTS

- Achieved AIR 5659 in JEE Mains 2022, among 1.1 million aspirants.
- Achieved AIR 1227 in JEE Advanced 2022 and secured my position in a prestigious Engineering Institute.
- Awarded Dean's List Recognition in semesters 1 and 2 for outstanding academic performance at IITGN

## POSITIONS OF RESPONSIBILITY

- **Events Lead, Executive and Manager, (Amalthea) IITGN** [May '23 - Feb '24]
  - Organized and led the event ROBOWARS, the first for IIT Gandhinagar
  - Worked with the Events Management Team in overseeing all the events at IIT Gandhinagar.
  - Aided other Events Leads in planning and execution of their events as well.
  - Managed food stalls for the events organised at IIT Gandhinagar.

## RELATED COURSES

- **Institute Courses:** Machine Learning, Introduction to Data Science, DSA-I, Data Centric Computing, Probability Statistics and Data Visualization, Calculus of Single Variable and Algebra, Calculus of Several Variables, Discrete Mathematics

## EXTRA-CURRICULAR ACTIVITIES

- Volunteered at Amalthea (IITGN Tech. Summit) and Blithchron (IITGN Cultural Fest) during my First Year.

- Daily badminton practice, showcasing commitment, physical fitness, and strategic skills development.