

ACADEMIC DETAILS

Degree	Specialization	Institute	Year	CPI/%
B.Tech.	Computer Science and Engineering	IIT Gandhinagar	2022-Present	9.61
Class XII	Physics, Chemistry, Maths	Dr. Kitchlu Public School, Moga (CBSE Board)	2020-2022	99.4
Class X		Sacred Heart School, Moga (ICSE Board)	2006-2022	98.6

PROJECTS

- **Human Activity Recognition (HAR) Analysis**

[Jan '24 - Feb '24]

(Prof. Nipun Batra, IIT Gandhinagar) | [Project Link](#)

- Utilised the UCI-HAR dataset containing time-series data of thirty subjects performing six activities.
  - Leveraged TSFEL library to extract features out of the time-series, performed Principal Component Analysis (PCA) for dimensionality reduction.
  - Trained a Decision Tree model on the featurised data and utilised the Physics Toolbox Suite app to collect the activity data to test the model.
- **Child Safety Monitoring App using MATLAB's Simulink Support Package for Android**

[Aug '23 - Nov '23]

(Prof. Nithin V. George, IIT Gandhinagar) | [Project Link](#)

- Designed and implemented an Android app for a smart bicycle equipped with embedded hardware sensors (gyro-scope, accelerometer, GPS) built into child's android device to monitor the child's safety during cycling.
  - Engineered a fall detection mechanism with the capability to distinguish actual falls from false detections
  - Leveraged Simulink Support Package for Android Devices along with the TCP/IP models for efficient data transmission and communication between the cycling device and the parent's device.
- **Logical Puzzle and Graph based Games developed using C and C++**

[Aug '23 - Nov '23]

(Prof. Balagopal Komarath, IIT Gandhinagar) | [Project Link](#)

- Developed games like Connect4, Up-it-Up, Sudoku Solver, and 2x2x2 Rubik's Cube Solver using optimal move strategy between two player moves and graph traversal algorithms.
  - Leveraged the SFML graphics library of C++ along with Entities, Components, Systems paradigm for designing simple interactive games.
- **Analysis of Datasets using Probability, Machine Learning, and Statistics**

[Jan '23 - April '23]

(Prof. Shanmuganathan Raman, IIT Gandhinagar) | [Project Link](#)

- Implemented statistical and probabilistic analysis on several datasets including the American College Data (AAUP and US News), Goodreads Books, and the 2013 Grand Slam Tennis.
  - Uncovered critical insights through advanced data manipulation and visualisation techniques using Python libraries such as NumPy, Seaborn, Plotly, Pandas, Scikit-Learn
- **Numerical Modelling of Oil Spillage over Water Surface using Convection-Diffusion Equation**

[Aug '23 - Nov '23]

(Prof. Dilip Srinivas Sundaram and Prof. Akshaa Vatwani, IIT Gandhinagar) | [Project Link](#)

- Developed a comprehensive mathematical model to simulate the effects of oil spillage using the convection-diffusion equation in a 2D domain using Python's Matplotlib.
  - Investigated the concentration profiles of oil under varying velocity fields by setting the suitable boundary conditions and employing forward and backward difference in Euler's Method.

TECHNICAL SKILLS

- **Programming Languages:** Python, C, C++, MATLAB, HTML, CSS, JavaScript, Verilog (HDL).

• **Tools:** Vivado, Autodesk Fusion 360, Autodesk Inventor, Laser Cutting, 3D Printing, Git, Arduino UNO,  $\LaTeX$

• **Libraries:** NumPy, SciPy, Pandas, Plotly, Matplotlib, Seaborn, Scikit-Learn, OpenCV, TSFEL, SFML (C++).

ACHIEVEMENTS

- Secured a grade of **A+ (11/10)** for outstanding performance in the courses **Calculus of Single Variable and Linear Algebra and Principles and Applications of Electrical Engineering.**

• Felicitated with **Dean's List Award** IITGN for **Semester I and II** for excellent academic performance.

POSITIONS OF RESPONSIBILITY

- **Core Committee Member, Amalthea '23 - IIT Gandhinagar's Annual Technical Summit**

[April '23 - Feb '24]

- Successfully managed two teams: **Finance and Design**
  - Managed the financial aspects of the entire summit, prepared the budget, tracked expenses, and maintained financial stability throughout the summit.
  - Worked closely with the Design team of 25 members to develop creative visual assets, including branding materials and visual presentations that enhanced the overall experience of the summit both at the IITGN Campus and Sabarmati Riverfront, Ahmedabad.
- **General Member, Technical Council, IITGN**

[May '23 - April '24]

- Contributed to IIT Gandhinagar's own centralized hub and interactive platform for students - **metaiitgn**.