Jaskirat Singh Maskeen
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Discipline of Computer Science and Engineering
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ACADEMIC DETAILS

Degree	Specialization	Institute	Year	CPI/%
B.Tech.	*Computer Science and Engineering*	Indian Institute of Technology Gandhinagar	2023-Present	9.90(/10)
Class XII	*Physics, Chemistry, Maths*	Sanskriti School	2022-2023	97.4
Class X		Sanskriti School	2020-2021	93.83

SCHOLASTIC ACHIEVEMENTS AND AWARDS

- Awarded **Scholarship for Academic Excellence** for being institute rank **#1** in the batch for academic year 2023-24.
- Selected in the Dean's List of Semester-1, Semester-2, Semester-3 for exhibiting excellent academic performance.
- Awarded certification in teaching during Semester-2, 2024.
- Awarded the Potential to be a Budding Ramanujan award by Mathematical Sciences Foundation in Jan 2019.

RESEARCH EXPERIENCE

- **Algorithms to improve efficiency of Spiking Neural Networks** [Dec '24 - Ongoing]
  (Advisor - Professor Sandip Lashkare, IIT Gandhinagar) | *Project Link*
  - Spiking Neural Network (SNN) development using resistive random access memories (RRAM) for pattern recognition.
  - Understanding Synaptic Neural Networks and its accuracy on a simulated network vs. on physical hardware.
  - Implemented an arbitrary spike-timing-dependent plasticity (STDP) approach to simulate the neural network on the MNIST dataset.

TECHNICAL SKILLS

- **Programming Languages and Others:** C++, C, Python, HTML, CSS, JavaScript (basic), LaTeX
- **Libraries:** Numpy, Pandas, Flask, Google API Client, Py-Cord
- **Tools:** Github, Linux (Ubuntu).
- **Cloud/Databases:** MongoDB, SQL

RELEVANT COURSES

- **Computer Science and Electrical courses**
  Computing [A+, 11/10†], **Data Centric Computing** [A, 10/10, 95/100], **Electronic Devices** [A, 10/10], **Data Structures and Algorithms-I** [A−, 9/10, 97.75/100], **Principles and Applications of Electrical Engineering** [A, 10/10], **Theory of Computing**††, **Digital Systems**††, **Introduction to Data Science**††, **Data Structures and Algorithms-II**††
- **Sciences and Statistics courses**
  Linear Algebra and Calculus [A, 10/10], **Ordinary Differential Equations** [A, 10/10], **Calculus of Several Variables** [A−, 9/10], **Probability Statistics and Data Visualization** [A−, 9/10], **Discrete Mathematics** [A−, 9/10], **Introduction to Quantum Physics** [A, 10/10], **Biology for Engineers** [A+, 11/10†], **Foundation and Applications of Spectroscopy**††, **Numerical Analysis**††

† indicates A+ or 11/10 grade which is awarded for outstanding performance and ranking #1 in the batch
†† indicates courses for the upcoming semester

SELECTED PROJECTS

- **Electoral Bond Analysis (Web Development Project)** [Jan '24 - Apr '24]
  (Advisor - Professor Mayank Singh, IIT Gandhinagar) | *Project Link*
  - Data Handling & Database Integration: Processed electoral bond details from PDFs to CSV, and utilized MySQL,to integrate with Flask.
  - Designed an interactive website with Flask and Bootstrap, having robust search functionality, detailed data filtering, and dynamic visualizations using ChartJS. Users can analyze and save insights about bonds purchased/donated by individuals, companies, and political parties.
- **Lost and Found System (Web Development Project)** [Dec '23]
  (Winter Projects, Metis Dev Club, IIT Gandhinagar) | *Project Link*
  - Developed a web-based platform that enables students to report lost items and allows others to search for and claim found items within the college campus.
  - Utilized tools such as Google authentication, proof of ownership check, and an OTP system to ensure only the correct person receives the item.
- **Image Processing, Data Narratives and Elementary Probability** [Aug '23 - Nov '23]
  (Advisor - Professor Shanmughanathan Raman, IIT Gandhinagar) | *Project Link*

- Developed and applied statistical analysis skills to extract insights from ATP tennis datasets, focusing on data exploration and pattern finding.
- Developed elementary computer vision techniques, specifically Otsu's binarization and histogram equalization, to enhance images' contrast and visual clarity.

POSITIONS OF RESPONSIBILITY

- **Member, Technical Council IITGN** [Aug '24 - Ongoing]
  - Organized monthly hackathons
  - Overlooked organisation of inter-club activities
- **Core Member, Odyssey, The Astronomy Club IITGN** [Dec '23 - Ongoing]
  - Conducted periodic night sky observation sessions with over 200 attendees.
  - Participated in talks about astrobiology and extremophiles.
  - Processed images obtained from Unistellar eVscope 2.
- **Event Lead, Amalthea IITGN** [May '24 - Nov '24]
  - Organized and prepared questions across logical reasoning and mathematics for a two-round quiz competition across schools for grades 9th - 12th. Handled over 150 Round 1 participants and over 70 Round 2 participants.
  - Designed and implemented a dynamic Code Golfing website, challenging users to solve coding problems with the shortest possible solutions, with a portal for submitting their code and displaying a leaderboard.
- **Student Guide. IITGN** [Aug '24 - Ongoing]
  - Guiding and mentoring a batch of ten students throughout their first year.
  - One of the forty selected student guides from the entire undergraduate population at IIT Gandhinagar.
- **Academic Discussion Hour Mentor, IITGN** [Sep '24 - Nov '24]
  - ADH mentor for MA 103: Calculus of Single Variable Course, taken by $\approx$ 400 undergraduates.
  - Held weekly sessions to resolve doubts and clarify concepts taught in class.