

Tejas Lohia

Junior Undergraduate

Computer Science & Engineering, Minors in Mathematics

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ACADEMIC DETAILS

Degree	Specialization	Institute	Year	CPI / %
B.Tech.	Computer Science and Engineering	Indian Institute of TechnologyGandhinagar	2023-2027	9.11
Class XII	Physics, Chemistry, Maths	Central Board of Secondary Education	2022-2023	94.0 %
Class X		Central Board of Secondary Education	2020-2021	96.0 %

RESEARCH EXPERIENCE

- **Multi-Target, Multi-Camera Tracking, Summer Research Internship, IIT Bombay** [May'2025–July'2025]
(Advisor: Prof. Ganesh Ramakrishnan)
 - Designed and implemented a state-of-the-art model for 3D object detection and multi-target tracking across multiple cameras with depth sensors on synthetic datasets of AICITY 2025 having varying conditions and high occlusions.
 - Used advanced geometric constraints, 3D pose estimation, and hierarchical clustering to improve tracklet association and cross-camera identity matching, improving results with spatio-temporal modeling and multi-view integration.
 - Currently targeting a research paper for submission based on these findings.

PROJECTS

- **FusionEdge – TinyWL based Window Manager for Linux (Open-source Project)** [Jan'2025–May'2025]
(Advisor: Prof. Balgopal Komarath) | [Project link](#)
 - Designed a feature-rich window manager atop the Wayland protocol, introducing advanced layered surface support, foreign window integration, and dynamic memory management for efficient multi-application workflows.
 - Improved system reliability and user experience by resolving upstream bugs, applying optimizations, and enabling deep customization for minimal desktop environments on Ubuntu, facilitated user-driven enhancements.
 - The project is maintained and has been cloned by numerous users on GitHub, reflecting its growing adoption.
- **Animal Pose Transfer and regeneration** [Aug'2025–Present]
(Advisor: Prof. Shanmuganathan Raman)
 - Designing a pipeline for generating 3-d quadruped avatars from monocular images using diffusion models.
 - Designing a pipeline for transferring poses between different quadruped species and generating realistic images with the target pose while preserving texture and background using the generated 3-d avatars.
- **Exploration Beyond Vanilla HNSW: Learning Graph Structure for Smarter ANN Search.** [Feb'2025–Apr'2025]
(Advisor: Prof. Anirban Dasgupta) | [Project link](#)
 - Implemented data-driven enhancements to HNSW graphs, combining frequency-based layer assignment, clustering-informed strategies, and SCC-aware pruning to optimize the graph structure for high-performance approximate nearest neighbor (ANN) search in high-dimensional spaces.
 - Demonstrated that the optimized HNSW variants achieved substantial improvements in recall and query speed over standard baselines, validating the practical benefits of the approach on large-scale, high-dimensional datasets.
- **Inter IIT Tech Meet 13.0 – Zelta Automations Algorithmic Trading** [Dec'2024]
(IIT Gandhinagar Contingent) | [Project link](#)
 - Developed algorithmic trading strategies for BTC and ETH pairs as part of the Inter IIT Tech Meet 13.0 challenge.
 - Utilized technical indicators with dynamic risk management techniques, and explored machine learning techniques.
 - Conducted extensive backtesting and validation on multi-year historical data to ensure robust performance across diverse market conditions, and achieved strong returns and sharpe ratio of 2.83 on ETH and 1.96 on BTC.

TECHNICAL SKILLS

- **Programming Languages:** Python, C/C++, MATLAB, Verilog
- **Libraries:** PyTorch, TensorBoard, NumPy, Pandas, Matplotlib, Scikit-Learn, OpenCV, SeaBorn, TensorBoard, MM3d
- **Developer Tools:** Git, GitHub, VS Code, Jupyter Notebook, Xilinx Vivado, Autodesk Inventor

ACHIEVEMENTS

- Ranked **1st in the Electrical Engineering branch** in both semesters and included in the **Dean's List** in Semester I at IIT Gandhinagar for outstanding academic performance.
- Awarded **Branch Change** to Computer Science and Engineering from Electrical Engineering based on exceptional academic performance.
- Performed in top **150** teams out of **15000** teams in Hackon by Amazon in the domain of Natural language processing.
- Honored with the **Academic Citation** for outstanding academic achievements and branch rank in the third semester.
- Secured **All India Rank(AIR) 3510** in **Joint Entrance Examination(JEE) Mains** out of 1.3 Million students with **100 percentile** in Physics; achieved **AIR 3703** in **JEE Advanced**.