

Maitreyee Sar

(she/her)

4th Year (7th Semester)

Bachelor of Technology in
Computer Science and Engineering
Kalinga Institute of Industrial Technology (KIIT)

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ACADEMIC DETAILS

Examination	Major	Year	Grade
Bachelor of Technology	Computer Science and Engineering	2022–Present	9.8/10 [Batch rank: 7/4276]
Higher Secondary (AISSCE, PCM)	—	2022	93.8%
Secondary (ICSE)	—	2020	96.4%

PUBLICATIONS

- **Peel and Pool: The Path to Mandala Perfection.** Tusita Sarkar, [Maitreyee Sar](#), Partha Bhowmick. *International Conference on Pattern Recognition (ICPR) 2024*. [Link]

INTERNSHIPS

- **Modeling Network Behaviour and Interference in HPC Networks at Scale** C++, *OpenMPI, SST Guide*: Dr. Preeti Malakar, IIT Kanpur | May–July 2025
 - Analyzed how different network topologies and communication patterns affect performance using simulation to study large-scale supercomputer workloads and bottlenecks.
- **Geometric Analysis of Mandala in the Context of Computational Art** Python *Guide*: Prof. Partha Bhowmick, IIT Kharagpur | May–July 2024
 - Implemented an algorithm to process handcrafted Mandala artwork using binarization and connected-component analysis with a “peeling” technique to detect its order of symmetry and correct geometric distortions.
 - Collected statistical data on performance variations for different levels of size, density and distortions in the original Mandala drawing.
- **Keyword-based Document Indexing and Retrieval System** Python, *SQL Guide*: Prof. Arobinda Gupta, IIT Kharagpur | Jun–Aug 2023
 - Developed a file indexing and retrieval system with a MySQL-based caching mechanism to optimize repeated searches and reduce lookup time.
- **Analysis of Searching Algorithms using Scatter Plot** Python *Guide*: Prof. Sajal Mukhopadhyay, NIT Durgapur | Oct–Nov 2020

ACADEMIC ACHIEVEMENTS

- Awarded **Summer Research Fellowship 2025** by the *Indian Academy of Sciences, Indian National Science Academy, and The National Academy of Sciences*.
- Selected for **Summer 2025 research fellowships** at **IIT Kanpur (Institute-Funded category)**, **IIT Delhi**, and **IIT Madras**.
- Qualified **GATE 2025 (Computer Science)** and **GATE 2025 (Data Science and AI)**.

PROJECTS

- **[ongoing] Flight Network Congestion Prediction using Graph Attention Network** | Python (PyTorch, PyTorch Geometric) *Semester Project — 7th Semester, 2025* Developed a Graph Attention Neural Network with LSTM to capture the spatio-temporal dynamics of a network of airports (macro-level, as opposed to individual flight-level) [GitHub]
- **mnemo: A RAG-Based Memory Aid** Python, *SQLite, FAISS, HuggingFace, Ollama Mini Project — 6th Semester, 2024–25* Developed a personal memory assistant for individuals with memory loss, using embeddings and FAISS for similarity search with a dedicated people database. Currently integrating ML-generated tags and audio input for natural interaction. [GitHub]
- **solver: Algorithm Solver and Visualizer** Python (Flask, Matplotlib, NumPy, NetworkX), *HTML, CSS, JavaScript Applications Development Lab Project — 6th Semester, 2024–25* Built a Flask-based visualization and solver tool for common algorithmic paradigms (Greedy, Dynamic Programming, Graph). Currently expanding with real-time visualizations and advanced algorithm modules. [GitHub]

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, C
- **Web Technologies:** HTML, CSS, JavaScript, Flask
- **Libraries/Frameworks:** OpenCV, Matplotlib, PyTorch, ScikitLearn
- **Databases:** MySQL, PostgreSQL, Oracle SQLPlus

CO-CURRICULAR ACTIVITY

- **Student Volunteer** at the **ACM Women in Computing Grad Cohort 2025**, IIT Kanpur
- Student Member, IEEE
- **Dramatics Minister**, Carmel Convent High School (2020 batch): Student-in-charge for school events, anchoring, and scriptwriting
- **Sangeet Visharad Diploma** (Vocal Classical, 5 years, First Division with Distinction), 2022 — Pracheen Kala Kendra, Chandigarh
- **Ankan Bivakar Diploma** (Painting, 5 years, First Division with Distinction), 2019 — Bangiya Sangeet Parishad, affiliated with Rabindra Bharati University, Kolkata