



EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2027	M.TECH Dual Degree 5Y	IIT Kharagpur	8.84 / 10
2021	CBSE (XII)	Petals International School, Jaipur	95.60%
2019	CBSE (X)	Petals International School, Jaipur	94.00%

COMPETITION/CONFERENCE

Explicit Representations in 4d : A Comparative analysis with Hexplane Prof. Debashish Chakravarty	Dec'23 - Feb'24
<ul style="list-style-type: none">Worked with 6 member research team to successfully reproduce CVPR 2023 Paper: HexPlane: A Fast Representation for Dynamic SceneConducted in-depth replication of complex spherical harmonics experiments, visualized static and dynamic scenes for model insightsBuilt highly efficient PyTorch dataloader for large iPhone dataset, enhancing overall data throughput and training pipeline robustnessIntegrated temporal loss in training loop, achieving consistent PSNR of 27 and significantly improving dynamic scene rendering accuracy	

WORK EXPERIENCES

Autonomous Ground Vehicle Research Group	Aug'23 - Present
<i>Part of the DL and Computer Vision Research Team under Prof. Debashish Chakravarty, IIT Kharagpur</i> <ul style="list-style-type: none">Worked on autonomous vehicle systems using F1-TENTH, learning advanced path-planning algorithms including Dijkstra and RRTImplemented control systems like Automatic Emergency Braking (AEB) and Pure Pursuit Algorithm in simulation environmentsDeveloped and tested RRT planner within ROS-based simulators, ensuring integration with vehicle control and perception modulesDesigned fully functional, dimensioned robot chassis in SolidWorks with mobility performance validated using simulation tools	

PROJECTS

KGP Bus Tracking System Course Project Prof. K. S. Rao and Prof. Pabitra Mitra	Mar'25 - Apr'25
<ul style="list-style-type: none">Developed live bus tracking platform using Node.js, Express, React.js, PostgreSQL and Leaflet to improve campus transit visibilityEngineered a 3-role system: Admin, Driver and User with role-based access, JWT authentication and Google OAuth for flexible loginImplemented live bus and user tracking with 10 second polling using Leaflet algorithms, dynamic markers with stop-arrival detectionBuilt admin tools to manage buses, stops, routes, drivers and schedules in real time, with CRUD support and WebSocket syncDesigned driver and user portals to assist with navigation, nearby stop discovery and tracking with ETA based on spatial queries	
Gram Panchayat Management System Course Project Prof. K. S. Rao and Prof. Pabitra Mitra	Jan'25 - Feb'25
<ul style="list-style-type: none">Developed an e-Governance portal using Flask, Python and PostgreSQL for Admin, Panchayat Members and Citizens with secure loginDesigned citizen onboarding workflow requiring approval by admin or panchayat, ensuring validated and structured data entryImplemented modules for land records, tax payments, service requests, welfare schemes and certificate issuance with status trackingIntegrated dashboards for members and officials to view village data, population metrics, environmental initiatives and irrigation statusUsed psycopg2 for PostgreSQL interactions with raw SQL queries, managing access control and user verification securely	
Auditorium Management System Course Project Prof. Debasis Samanta and Prof. Sourangshu Bhattacharya	Mar'24 - Apr'24
<ul style="list-style-type: none">Built an auditorium reservation platform using MongoDB and EJS supporting Admin (manager, clerk, sales), Vendor and User rolesImplemented dynamic seat mapping with real-time booking, cancellation and pricing adjustments based on seat and cancellation timeUsed Nodemailer to streamline email notifications, such as account recovery, vendor onboarding and sending EJS-based PDF ticketsCreated vendor analytics dashboards to monitor ticket sales, while enabling users to browse events and reserve available seatsApplied role-restricted access to sensitive features like revenue reporting and financial views, limiting them to manager (Admin) roles	

AWARDS AND ACHIEVEMENTS

- Reached the level **Expert** with maximum rating of **1772** on Codeforces (**Lubesh**) through consistent dedicated practice and contests
- Achieved the competitive **Knight** level on the LeetCode with rating of **1998**, ranking in the top **2.63%** globally (handle -**Lubesh**)
- Earned global rank **361** out of **27,926** in **Educational Codeforces Round 180 (Div 2)**, demonstrating strong problem-solving skills
- Ranked globally **147th** out of **28,244** participants in the **LeetCode Weekly Contest 455**, showing strong algorithmic proficiency
- Secured impressive All India Rank **6498** in JEE Advanced 2022 among **1.6 lakh** registered candidates, conducted by the **IIT Bombay**
- Achieved commendable All India Rank **9447** in the Joint Entrance Examination (**Main**) 2022 among **10,26,799** appearing candidates
- Secured **department change** to Computer Science and Engineering at IIT Kharagpur among **1900+** peers based on the performance

COURSEWORK INFORMATION

Theory and Laboratory: Programming and Data Structures, Algorithms-I, Software Engineering, Compilers, Switching Circuits and Logic Design, Operating Systems, Computer Networks, Computer Organisation and Architecture, Database Management System, Systems Programming Laboratory

Theory: Algorithms-II, Discrete Structures, Machine Learning, Deep Learning, Formal Language and Automata Theory

Mathematics: Linear Algebra, Probability and Statistics, Advanced Calculus

SKILLS AND EXPERTISE

Languages: C, C++, SQL, Bash, JavaScript, Verilog, MIPS, Assembly, Express.js, ReactJS, Node.js, Gawk, Grep, gdb, Flex, Bison, gprof, Python
Skills: Data Structures, Algorithms, Object-Oriented Design, Systems Programming, Socket Programming
Technologies: **ML:** PyTorch, TensorFlow, Keras, Numpy, Matplotlib **Robotics:** ROS/ROS2, Docker, Git, Matlab, Solidworks

EXTRA CURRICULAR ACTIVITIES

- Core member of the **Open-Soft backend** team from Nehru Hall of Residence that secured **4th** place in the Inter-Hall **GC - Tech** event
- Successfully completed the **Health & Fitness** training course with **100%** attendance (**98%+ avg.**), awarded for dedication and discipline
- Actively participated in **Socult Night** organised by Nehru Hall of Residence, performing in multiple vibrant and diverse cultural segments
- Participated in multiple Intra-Hall General Championship socio-cultural events, showcasing creativity and involvement in hall activities