



Kartik Agarwal
UG (III Year II Semester)
B.Tech. (Engineering Physics)
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Registration No: 22410021/2025

Indian Institute of
Technology
Roorkee


VERIFIED

Education

Year	Degree/Examination	Institution/Board	CGPA/ Percentage
2024	B.Tech. 3rd Year	Indian Institute of Technology, Roorkee	7.404
2022	Intermediate (Class XII)	Shri Gulab Rai Montessori School	94.40 %
2020	Matriculate (Class X)	Shri Gulab Rai Montessori School	95.80 %

Internships

Software Developer Intern | Parimitra Pvt Ltd

July 2024 - September 2024

- Developed secure role-based authentication by defining user roles, integrating Google Authenticator and OTP services.
- Developed an API to shift data filtration management from frontend to backend, reducing website load, preventing hangs, and enabling efficient graph generation.
- Engineered a software system to store IoT device analytics in Firebase, modeled Firestore clusters for efficient data organization, and integrated Twilio to deliver real-time alerts and warnings to clients.
- Delivered products CrowdEye for crowd analytics and TransitEye for vehicle tracking, deploying on Vercel with CI/CD and performance optimization for a responsive user experience.

Projects

Auto Segmentation of 3D Cells | IIT Roorkee

June 2024 - July 2024

- Developed a TensorFlow model for 3D cell segmentation in microscopy, achieving a Dice coefficient of 0.2917.
- Automated preprocessing for over 1,500+ 3D images, streamlining the workflow and enhancing efficiency.
- Improved the signal-to-noise ratio, significantly boosting image quality and image analysis accuracy.
- Fine-tuned hyperparameters and optimized training processes, leading to more reliable segmentation results.

R-Land Hunt | IIT Roorkee

December 2023 - January 2024

- Developed an application using geofencing technology to replace QR codes, preventing chaos at treasure hunt clue's locations and ensuring fair participation with proper checks.
- Integrated Channeli OAuth for college student-only registrations, and implemented a leaderboard and scoring system to enhance user experience and engagement during the hunt.
- Added WebSockets to enable real-time user connections and created an admin dashboard to manage and edit upcoming hunts, providing real-time updates for organizers.

Commutify | IIT Roorkee

October 2024 - December 2024

- Integrated an ML model to predict occupancy and transit details, connecting it to another server via an API endpoint that provides real-time transit occupancy data for a trip planner.
- Created a dashboard to analyze ETM data, providing service providers with agency- and route-based analytics, including revenue, occupancy, and time-based trends for improved operational insights.
- Integrated the Esquisse app, an R-based tool, to enable interactive data visualization and enhance analytical efficiency.
- Configured and managed NGINX for hosting backend APIs, optimized server performance, and set up logging for real-time API monitoring and error tracking in production environments

Low Light Image Enhancement | IIT Roorkee VLG

May 2024 - June 2024

- Enhanced and improved low-light images using brightness adjustment, illumination mapping, and total variation filters.
- Implemented techniques to achieve an average Peak Signal-to-Noise Ratio (PSNR) of 28 across test images.
- Improved image quality for surveillance and medical imaging applications by enhancing brightness and minimizing noise.

Skills

Computer languages	Javascript , C++, Python
Software Packages	ReactJS, MongoDB, EJS, Express, NodeJS, SQL, MERN, Bootstrap, Next.js, Redux, MaterialUI, Firebase, AWS, Nginx, Postgres, Numpy, Pandas, EJS Scripts, cors
Additional Courses	IBM-311 Operations and Supply Chain Management
Languages Known	English(SRW) and Hindi (SRW)

Positions of Responsibility & Extra Curriculars

Website Manager | Cognizance IIT Roorkee

October 2024 - March 2025

- Led a team of 6 developers to deliver a high-quality, responsive website, ensuring timely project completion to maximize participant engagement
- Oversaw code reviews and quality assurance, maintaining best practices in coding standards, performance optimization, and user experience design
- Collaborated with product managers and designers to define UI/UX requirements, ensuring the implementation of user friendly, efficient interfaces to boost website traffic.
- Worked on integrating carting and payments system reducing dependencies on external collaborations.