



Roshan Kumar

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B.Tech - Civil Engineering

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EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech.	Indian Institute of Technology, Guwahati	7.23 (Current)	2020-Present
Senior Secondary	CBSE Board	95.0%	2020
Secondary	CBSE Board	90.2%	2018

PROJECTS

- **Age and Gender Detection from CCTV footage** March 2022
Inter IIT Tech Meet 10.0 Github
 - Detection of **Age and Gender** of people in **low-quality CCTV footage** with **accuracy of 94.4%** and **MAE of 5.249**.
 - Trained **YOLOv5** model for object detection, and implemented **ByteTrack** for tracking.
 - Implemented **SwinIR** and **SRGAN** for **image super resolution**, and used **Multi Swin** for classification along with **coral layer** for ordinal regression, thus being solving the problem of identifying people efficiently in low-res videos.
- **Antahsagari** Jul. 2021 - Jan. 2022
4i Labs, IIT Guwahati Github
 - Trained **Masked RCNN** model on raw images for detecting underwater objects with **bounding-box loss** of **0.41**.
 - Used **Unsupervised color correction**, **Histogram Transformation** and **Gamma Correction** techniques to enhance the quality of underwater images which can be used to study effect of urbanization on aquatic ecosystem.
- **Violence Detection** Jun. 2022 - Jul. 2022
Coding Club, IIT Guwahati Github
 - Processed and Pre-trained a custom data-set and extracted the video frame by frame then performed **Object Detection** through **VGG 16** with **imagenet** weights.
 - Trained a **LSTM** architecture to analyze **temporal information** on output with **accuracy** of **95.49%**.
- **G-Meet Clone** Jul. 2022
Coding Club, IIT Guwahati Github
 - Implemented a Video Chatting Web App using **Node JS** and **socket.io** for back-end connectivity and **EJS** and **React Js** for the front-end.
 - Implemented the group call feature, Number of attendants and Screen Share using **Peer JS**.

ACHIEVEMENTS

- **Bronze Medal**, Bosch Age and Gender Prediction, 10th Inter IIT TechMeet 2022
- **International Rover Design Challenge**, Qualified in the top 16 teams of all teams participating worldwide 2022
- **Techevience 8.0**, Yuvaan, Best Project in Judges' Choice and Overall Categories 2022
- **Summer Analytics '21**, Ranked in the top 10 percentile out of about 5000 students 2021

TECHNICAL SKILLS

- **Programming**: Python, C/C++, Javascript
- **Tools/Frameworks**: Pandas, Keras, Tensorflow, Pytorch*, OpenCV, ROS, Node JS
- **Operating Systems**: Windows, Linux* * Elementary proficiency

KEY COURSES TAKEN

- **Mathematics**: Linear Algebra, Basic Calculus, Elementary Number Theory , Multi-variable Calculus
- **Computer Science**: Introduction to Computing - CS101(with lab - CS110)
- **MOOCs**: Deep Learning Specialization by DeepLearning.ai(Andrew NG, Coursera)
- **Robotics**: Mechatronics (ME202 M)

POSITIONS OF RESPONSIBILITY

- **Event Manager**, Technical Board, IIT Guwahati May. 2022 - Ongoing
- **Project Head of Antahsagari**, 4i Labs, IIT Guwahati Jun. 2022 - Ongoing

EXTRACURRICULARS

- **Core Team Member**: Consulting & Analytics Club, IIT Guwahati
Organised Cascation, Cascade Cup & curated the content for Summer Analytics'22 and Winter Consulting'21
- **Organizer**: Competetions Module, Techniche'21