



# Roshan Kumar

Roll No.:200104093  
B.Tech - Civil Engineering  
Indian Institute Of Technology, Guwahati

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## EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech.	Indian Institute of Technology, Guwahati	6.77 (Current)	2020-Present
Senior Secondary	CBSE Board	95.0%	2020
Secondary	CBSE Board	90.2%	2018

## EXPERIENCE

- TransOrg Analytics** May 2023 - Aug 2023  
*Data Analyst Intern* Remote  
– Managed and analyzed client data in the automotive sector to **predict trends and develop pricing strategies**.  
– Used **SQL, Tableau** to make an **interactive Dashboard** and developed models with **XG-Boost & Gradient Boost**.
- Function Estimation on Riemannian Manifolds** May 2023 - Jul 2023  
*Research Intern under Dr. Budhaditya Hazra at IIT Guwahati* Guwahati  
– Explored **Riemannian geometry** and Ito Calculus to capture nonlinear relationships using geodesics and tensors.  
– Analyzed **Gaussian and log-normal PDFs** for curvature, estimating parameters via **MLE and Bayesian Model**.

## PROJECTS

- DevRev's Expert Answer in a Flash** Dec 2022 - Feb 2023  
*Inter IIT Tech Meet 11.0 | Gold Medal* rebrand.ly/devrevQA  
– Developed optimized pipeline for **retrieval of KB articles**, enhancing performance, latency, and resource usage.  
– Generated **Synthetic Data** via **parsers and transformers**, employing NER Re-ranking for relevant queries.  
– Optimized Question-Answering models using **ONNX and Quantization** techniques reducing the **latency to 250ms**.
- Bosch's Age and Gender Detection from CCTV footage** Jan 2022 - Mar 2022  
*Inter IIT Tech Meet 10.0 | Bronze Medal* rebrand.ly/boschCCTV  
– 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.  
– Used **SwinIR, SRGAN, Multi Swin** for efficient person identification and **CORAL Layer** for age prediction.
- Chess Engine** Aug 2023  
*Personal Project* rebrand.ly/chessEngine  
– Created a two-player game of chess with features like **castling, en passant** and single and multi-player, using Pygame.  
– Implemented **NegaMax Algorithm** and **Alpha Beta Pruning** to create a chessbot that rated 1800 against Stockfish.

## ACHIEVEMENTS

- Gold Medal**, Devrev Expert Answer in a Flash, **Inter-IIT Tech Meet 11.0** 2023
- Finalists**, Getting funded by **Government of India** for prototyping and patenting AUV, IEDC 2022
- Bronze Medal**, Bosch's Age and Gender Classification from CCTV footage, **Inter-IIT Tech Meet 10.0** 2022
- Finalists**, Bosch PS for **Autonomous Driving** at ENcode, UDGM 2023
- International Rover Design Challenge**, Qualified in the top 16 teams of all teams participating worldwide 2022
- Best Project**, Yuvaan, **Best Project in Judges' Choice and Overall Categories** at Techevince 8.0 2022
- Summer Analytics '21**, Ranked in the top 10 percentile out of about 5000 students 2021

## KEY COURSES TAKEN

- Mathematics**: :Linear Algebra, Multi-variable Calculus, Tensor Calculus, Probability and Random Processes
- Computer Science**: :Introduction to Computing (with lab), Fundamentals of AI, Deep Learning
- Robotics**: Mechatronics, Robotics Vision and Control, Introduction to Reinforcement Learning

## POSITIONS OF RESPONSIBILITY

- Events Manager, Technical Board, IIT Guwahati**  
– Managed Overall events by Technical Board including Kriti, Techevince and Inter IIT May 22 - Apr 23
- Marketing Head, Techevince 9.0**  
– Headed the entire Marketing Team and got both monetary and non-monetary sponsors May 22 - Apr 23
- Web Development Head, Association of Civil Engg., IIT Guwahati**  
– Developed and maintained the Website and server of ACE for the students of Civil Engg. May 22 - May 23

## TECHNICAL SKILLS

**Programming languages:** C++, C, Python, MATLAB      **Web Technologies:** HTML, CSS, Django, JavaScript  
**ML/AI:** PyTorch, Tensorflow, NumPy, Pandas, Matplotlib      **Miscellaneous:** Git, Gazebo, ROS, Shell, Unity, L<sup>A</sup>T<sub>E</sub>X

## EXTRACURRICULARS

- Placement Logistics Team**, Volunteered for Logistics Team in Placement Season 2023 2022
- Consulting & Analytics Club**, Curated Resources for Winter Consulting '21 and Summer Analytics '22 2022
- Robotics Club**, Organised workshop for OpenCV and ROS for IIT Guwahati Campus Students 2021