

# ATANU SHUVAM ROY

Department of Computer Science & Engineering | Indian Institute of Technology, Kanpur

@ atanusroy22@iitk.ac.in

atanuroy911

atanu-shuvam-roy

www.atanusroy.com

+91 9026935417

## EDUCATION

**Indian Institute of Technology, Kanpur**  
MTech | CSE CGPA: 7.4/10  
2022 - Present Kanpur, India

**Jiangxi University of Science & Technology**  
BE | CST Percentage: 91.01%  
2018 - 2022 Ganzhou, China

**Notre Dame College XII, HSC**  
GPA: 5/5  
2017 Dhaka, Bangladesh

**St. Joseph Higher Secondary School X, SSC**  
GPA: 5/5  
2015 Dhaka, Bangladesh

## ACCOMPLISHMENTS

- 2023 - MHRD Fellowship (IIT Kanpur)
- 2022 - Outstanding International Graduate Award - JXUST, China
- 2019 & 2020 - Awarded Jiangxi Provincial Government Scholarship for foreign students, China

## COURSEWORK

### MTech Courses

- Embedded and Cyberphysical Systems
- Deep Learning for Computer Vision
- Introduction to ML
- Sensing Communication & Networking

### BE Courses

- Data Structures & Algorithms
- Operating Systems
- Embedded Systems
- Computer Networks
- Database Management System

## SKILLS

### Languages

C/C++, Python, Javascript (NodeJS/ReactJS), HTML/CSS/PHP, JAVA/Kotlin (Android), Flutter (Dart)

### Utilities

Scikit-learn, Pandas, Numpy, PyTorch, SQL, NoSQL (MongoDB), PyQt5, Git

## RESPONSIBILITIES(POR)

- International Student Representative** (Volunteer) at Jiangxi University of Science & Technology, China (Aug '18 - Jan'22)

## MISCELLANEOUS

## RESEARCH EXPERIENCE

**RADAR based Context Aware Tracking on IoT Devices** (M.Tech Thesis)  
Guide: Prof. Priyanka Bagade Mar 2023 - Present

- Designing a **Multi-label Classification Model** for tracking moving objects
- Building & deploying model on **IoT based hardware prototype** with RADAR

**IoT based on-site Water Pipeline Inspection**  
Guide: Prof. Priyanka Bagade Feb 2023 - Present

- Implementing **ECA mechanism** inside YOLOv7 model to increase accuracy
- Reducing model complexity** to enable better performance on Raspberry Pi

**Remote Traffic Police Sensing via Deep Learning** (B.Eng.)  
Guide: Dr. Ata Jahangir Moshayedi Mar 2021 - Dec 2022

- Detection of moving vehicles using **OpenCV and MobileNet SSD**
- Optimizing image capturing** method for camera tilt on UAV & detecting vehicle speed

**Raspberry Pi SCADA System for Agricultural Plant Monitoring** (B.Eng.)  
Guide: Dr. Ata Jahangir Moshayedi Aug 2018 - Mar 2019

- Designing an **IoT Zonal Network** for a sensor-based monitoring system
- Developing a **web-based SCADA System** for Raspberry Pi

## WORK EXPERIENCE

\*INTERNSHIP

**Associate Web Developer - Wizzartech** Remote  
Toronto, Canada Apr 2022 - Aug 2022

- Leading Jr. Developers** to finishing projects and micromanage the team
- Creating Websites** according to the demand of clients

**Research Assistant - Robotics and Automation Research Lab (RARL)** Part-Time  
Ganzhou, Jiangxi, China Aug 2018 - Dec 2021

- Led the team to successful completion of the projects in record time
- Developed Several Full Stack Applications- **Self-lecture Attendance Service, Pandemic-driven Exam Assistant (PEA), Raspberry Pi SCADA System for Agricultural Plant Monitoring**

## PUBLICATIONS

GOOGLE SCHOLAR

- Moshayedi, A.J., **Roy, A.S.**, Taravet, A., Liao, L., Wu, J. and Gheisari, M. "A secure traffic police remote sensing approach via a deep learning-based low-altitude vehicle speed detector through uavs in smart cities: Algorithm, implementation and evaluation", *Future Transportation*, 3(1), pp.189-209, 2023.
- Moshayedi, A.J.M., **Roy, A.S.**, Lan, H., Gheisari, M. and Bamakan, S.M.H. "Automation attendance systems approaches: a practical review" *BOHR International Journal of Internet of Things, Artificial Intelligence and Machine Learning*, 1(1), pp.25-34, 2022.
- Moshayedi, A.J., Kolahdooz, A., **Roy, A.S.**, Rostami, S.A.L. and Xie, X. "Design and promotion of cost-effective IOT-based heart rate monitoring" In *International Conference on Cloud Computing, Internet of Things, and Computer Applications (CICA 2022)*, Vol. 12303, pp. 405-410, 2022. SPIE.
- Moshayedi, A.J., Kolahdooz, A., **Roy, A.S.**, Sambo, S.K., Zhong, Y. and Liao, L. "Review on: The service robot mathematical model" In *EAI Endorsed Transactions on AI and Robotics*, 1(1), 2022.
- Moshayedi, **Roy, A.S.**, A.S., Kolahdooz, A. and Shuxin, Y. "Deep learning application pros and cons over algorithm deep learning application pros and cons over algorithm" In *EAI Endorsed Transactions on AI and Robotics*, 1(1), 2022.
- Moshayedi, **Roy, A.S.**, Liao, L. and Li, S., Y. "Raspberry Pi SCADA zonal based system for agricultural plant monitoring" In *6th International Conference on Information Science and Control Engineering (ICISCE)*, pp. 427-433, 2019. IEEE.
- Moshayedi, **Roy, A.S.**, and Liao, L. "PID Tuning Method on AGV (automated guided vehicle) Industrial Robot", *Journal of Simulation and Analysis of Novel Technologies in Mechanical Engineering*, 12(4), pp.53-66, 2019.

- 2023 - Completed a rigorous trekking expedition to Kashmir organized by the **Adventure Sports Club**, IITK
- 2023 - Enrolled to **Toastmasters International** to work on Public Speaking

---

## CERTIFICATIONS

---

- **Google IT Support Specialization** (Issued: May 2019) - Credential ID: XWWFL3BT84WV

---

## COPYRIGHTS

---

- 2022 - **Software Copyright** - Pandemic-driven Exam Assistant PEA 线上考试助手[简称: PEA] 登记号: 2022SR0088310 [China]
- 2020 - **Software Copyright** - Self-Lecture Attendance System 自学考勤系统[简称: SLAS] 登记号: 2020SR0058411 [China]

---

## LANGUAGE SKILLS

---

- **Bengali** - Native
- **English** - Fluent (IELTS: 7.0)
- **Hindi** - Intermediate
- **Chinese** - Beginner

---

## REFEREES

---

### Dr. Priyanka Bagade

📍 Indian Institute of Technology, Kanpur

✉️ pbagade@iitk.ac.in

### Dr. Amitangshu Pal

📍 Indian Institute of Technology, Kanpur

✉️ amitangshu@iitk.ac.in

### Dr. Ata Jahangir Moshayedi

📍 Jiangxi University of Science & Tech

✉️ ajm@jxust.edu.cn

---

## ACADEMIC PROJECTS

---

### Robot Assistant X - Your Personal ChatBot

Instructor: **Prof. Amitangshu Pal**

Aug 2023 - Nov 2023

- Implementing an **NLP Model using Tensorflow** on the Raspberry Pi Device
- Developing a Companion App for the Robot using Flutter for **Voice Control**
- Building a robot that can **manage indoor localization** using object detection sensors

### Welding Defect Detection using improved YOLOv7 model

Instructor: **Prof. Priyanka Bagade**

Feb 2023 - Apr 2023

- Implemented **Efficient Channel Attention Mechanism (ECA-Net)** in the network
- Reduced model size to test on IoT and Edge Devices

### Automated Guided Vehicle (AGV) Path Tracking

Instructor: **Prof. Indranil Saha**

Aug 2022 - Nov 2022

- Designed and simulated **4-wheel differential drive AGV** with object detection sensors in Coppelasim VREP
- Introduced a **path tracking algorithm** that uses camera sensor for the vehicle in Python

---

## TECHNICAL PROJECTS

---

### Activity Recognition Application using LSTM

Freelance Project

Sep 2023 - Aug 2023

- Implemented a **LSTM model and deployed in the cloud** for activity recognition (sensor-based) using PyTorch and built a mobile app to monitor sensors & predict activity

### Smart Parking System

Freelance Project

Jul 2022 - Sep 2022

- Developed Web Application and APIs to manage multiple parking lots using **ReactJS** and **ExpressJS** for admin tasks having **LoRa-Wan** as networking medium

### Online Exam Assistant

Team Project

Oct 2020 - Apr 2021

- Built a **full stack application** for distance education having course management, exam scheduling, and timed assessment with anti-cheating mechanisms
- **Ranked 2nd Position (Provincial) & 3rd Position (National)** - 14th China University Computer Design Competition

### Self-Lecture Attendance System

Team Project

May 2019 - Dec 2020

- Developed a QR-based attendance system with Java Springboot and **WeChat Mini Program** for the client module
- **Won 2nd Prize in Central China** - "Internet " Innovation Competition and the 7th "Discovery Cup", China