

Gurkirat Singh

Linkedin: [linkedin.com/in/gurkiratsingh007/](https://www.linkedin.com/in/gurkiratsingh007/)

Github: github.com/gurkirat007

Email: gurkirat.singh.nitw@gmail.com

Mobile: +919988801802

EDUCATION

- National Institute of Technology, Warangal** Warangal, India
Bachelor of Technology - Computer Science; GPA: 8.06 Aug 2020 - May 2024
Courses: Computer Networks, Operating Systems, Data Mining, Data Structures, Analysis Of Algorithms, Databases

INDUSTRY EXPERIENCE

- Mastercard Inc.** Pune, India
Software Development Engineer June 2024 - Present
 - Main Objective::**
 - * Own and enhanced the backend for "Customer Data Enhancement" product written in Java Springboot framework using the best coding practices along with rigorous code reviews in a fast paced setting, including writing unit tests for the same.
 - * Performed necessary enhancements to the frontend by replacing the incompatible libraries with the ones supported in Mastercard's PCF.
 - * The Webapp is used by external clients as well as internal team users.
 - Skills::** React, .Net, Java Springboot

INTERNSHIPS

- Mastercard Inc.** Pune, India
Software Developer Intern May 2023 - July 2023
 - * **Main Objective::** Proficiently contributed to the development of cutting-edge Consumer Credit Analytics Application and Small Business Credit Analytics, leveraging the dynamic capabilities of Spring Boot and React framework. Spearheaded the design and implementation of innovative features, ensuring the seamless integration of advanced analytics and intuitive user interfaces.
 - * **Skills::** Springboot, React
- National Institute of Technology, Warangal - Research Intern** Warangal, India
Student Researcher (Part-time) Aug 2022 - Oct 2022
 - * **Supervised by::** Dr. Sreehari Rao Patri
 - * **Main Objective::** Exploring various methodologies to enable the use of different Object Detection algorithms on edge devices. I was also responsible for developing a system in which our edge device sends the camera feed to our server and the server processes it and communicates the result back to the edge device using Wi-Fi. In addition, I developed a small neural network which runs on the microprocessor ESP32-CAM which has very limited computation power.
 - * **Publication:** Wrote a paper that got published in IEEE-ISES conference 2023, please check the Publications section for the details
 - * **Skills::** Autoencoders, Pytorch, Yolo, Autoencoders, C, esp-idf
- University Paris-Est Créteil, France - Research Intern** Remote
Student Researcher (Part-time) June 2022 - Aug 2022
 - * **Co-supervised by::** Dr. Alice Othmani & Pauline Puteaux
 - * **Main Objective::** Collection of in wild Post-traumatic stress disorder(PTSD) dataset and development of deep-learning based approaches for PTSD diagnosis using this dataset. I got to develop a model in collaboration with an international team which can detect PTSD through an interview using audio, video and textual features.
 - * **Publication:** Wrote a paper titled "PTSD in the Wild" during the intern, please check the Publications section for the details
 - * **Skills::** Video Classification, Transfer Learning, CNNs, LSTMs, Tensorflow
- National Institute of Technology, Warangal - Research Intern** Warangal, India
Student Researcher (Part-time) June 2022 - Aug 2022
 - * **Supervised by::** Dr. T Ramakrishnudu
 - * **Main Objective::** Creation of Deep Learning models for detection of Stress from social media posts and implement previous work in the same domain. I got to work on various approaches to develop a model to check if a person is stressed from his social media interaction for eg. Hand picking of features, word2vec based approaches, multi task learning etc.
 - * **Skills::** NLP, Pytorch, Neural Networks, Autoencoders
- University of South Florida - Research Intern** Remote
Student Researcher (Part-time) July 2021 - Dec 2021
 - * **Co-Supervised by::** Dr. Sreehari Rao Patri & Dr. Srinivas Katkooori
 - * **Main Objective::** Creation and simulation of an Flapping wing micro aerial vehicle(FWMAV) for Smart Pollination. I had worked on creating a simulation of a Robotic Bee on MATLAB along with a diverse team. I was also required to work upon developing a very lightweight model to detect flowers.
 - * **Skills::** MATLAB, Gazebo

SKILLS SUMMARY

- **Languages:** Python, C++, JavaScript, SQL, Bash, JAVA, C
- **Frameworks:** SpringBoot, React, Pytorch, TensorFlow, Keras, Scikit, OpenCV, NumPy, Flask
- **Tools:** CoppeliaSim, MATLAB, GIT, Gazebo, MySQL, SQLite, Simulink
- **Machine Learning:** Computer Vision, Deep Learning, Transfer Learning, Neural Networks, CNNs, Object Detection
- **Soft Skills:** Leadership, Event Management, Writing, Public Speaking, Time Management

PUBLICATIONS

- **Conference Paper: Object Detection and Classification in FWMAs for Smart Pollination:** Researched efficient object detection and classification for FWMAs using real-time video streaming, comparing direct upload versus compressed data methods. Concluded that direct upload yields higher accuracy and performance, while compressed data suits high latency environments with less data transfer. (December '22)
- **PTSD in the Wild: A Video Database for Studying post-traumatic stress disorder Recognition in Unconstrained Environments:** : The paper is published in Multimedia applications and Tools journal. Tech: Video Classification, Transfer Learning, CNNs, LSTMs, Tensorflow

PROJECTS

- * **BERRYMINATOR - Berry Picking Robot:** Developed a fruit locator based on Computer Vision which uses A* algorithm for path planning. It was developed on Coppeliasim. I also worked on the kinematics of robots using meccanum wheels.
Tech: Python, A* algorithm, CoppeliaSim, OpenCV (March '22) — **Video link:** [Click Here](#)
- * **AAROGYA 2.0 - Covid Chatbot :** Developed a discord chatbot that collects and delivers factual and validated information as part of Tri-NIT Hackathon. It can create answers to frequent inquiries, such as how the virus spreads or what the most prevalent and serious symptoms are and it can predict if a person has Covid, Lung Opacity, or Pneumonia just by looking at the Lung X-Ray. This model can give results with an accuracy of 90 percent.
Tech: Python, Tensorflow, OpenCV. (Feb '22) — **Video link:** [Click Here](#)
- * **Robocon - Lagori playing Robot:** Represented my university in DD Robocon 2022. Our team cleared the first stage of the competition. I assisted in creation of the design of our Robot. (March '22)
- * **MAZESOLVER - Maze Solving Robot:** Developed a Robot simulation using ROS to autonomously navigate through the maze and find the shortest path. It uses Dijkstra path finding algorithm to find the shortest.
Tech: ROS, Python, Gazebo, OpenCV (June '21)

HONORS AND AWARDS

- 2021 Got selected for Merit based scholarship at NITW.
- 2020 Cleared J.E.E. Mains with a rank of 1361 out of 1.4 million students.
- 2018 N.T.S.E. Stage 1 and Stage 2 Scholar. Only 800 students are selected all over India.

VOLUNTEER EXPERIENCE

- * **Additional Secretary, Robotics Club, NIT Warangal** Dec 2020 - May 2024
 - Started with merely 6 people in my freshman year expanded the community to 100+ people by final year. The effort included taking sessions for teaching ROS basics to enthusiasts, participating in different competitions, leading different technical projects some of them were even aired on local television.
 - I have also been responsible for successful conduction of various technical events conducted by the club which had 200+ participation.
 - Developed a flower dropping drone used at the flag hoisting ceremony on Republic day celebration at our university. Apart from that, also developed Fruit plucking and storing robot, Symbol Drawing robot, Mazerunner and many more.
- * **Placement Coordinator, Centre for Career Planning and Development, NIT Warangal** July 2023 - May 2024
 - Organized and coordinated in various campus recruitment drives.
 - Collaborated with fellow members to provide students with valuable resources and guidance for career development.
 - Assisted in connecting students with potential employers through resume workshops, mock interviews, and networking events.
- * **Additional Secretary, Computer Science Engineering Association, NIT Warangal** Oct 2021 - May 2024
 - I was Co-lead of the Event Conduction and Coordination team of 12 members.
 - Successfully conducted events with 200+ people participation.
 - Coordinated with similar associations of other universities, and we conducted tri-nit hackathon where the participation crossed 1000 participants.