Srajan Chourasia

Indian Institute of Technology, Goa

Fourth Year **Undergraduate**, **Computer Science and Engineering**
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LinkedIn **Github** **LeetCode** **Portfolio**

Education

BTech, Computer Science and Engineering, Indian Institute of Technology Goa	CGPA : **8.17/10**	2020 – Present
Class 12, CBSE, Army Public School, Bhopal	Aggregate: **91.8** %	2018 – 2020

Experience

Research and Development Intern, Siemens EDA (July 2023 – Present)

- Working under the Questa team, focusing on optimization and simulation of designs.
- Gained expertise in System Verilog by learning and using the product from a user's perspective.
- Currently focused on compiler optimization in C/C++ and Python to improve design performance, test bench simulation and design coverage.

Machine Learning Research Intern, IIT Goa (June 2022 – Sep 2022)

*[Guidance of **Dr. Sharad Sinha** | IIT Goa]*

- Developed multitasking CNN model for low-end devices, utilizing TensorFlow and Keras for pothole and threat level prediction.
- Curated and merged diverse datasets, creating a comprehensive 30k-image dataset with mapped features.
- Achieved an exceptional train accuracy of 99.85% in pothole detection and 91.57% on the test set. Demonstrated solid accuracy in assessing pothole threat levels, reaching 91.10% during training and 86.62% on the test set.
- The Android app uses the model for real-time pothole detection and threat level assessment, allowing citizen uploads and server-based prioritization for PWDs' repair decisions. Presented colour-coded density maps on Google Maps or Bharat Maps.

Contributor at GirlScript Summer of Code'22 [Open Source Program] (March 2022 – May 2022)

- Contributed to the **ML-CaPsule** project, actively participating in various tasks and enhancements.
- Developed a Tomato Plant Disease Predictor with a training accuracy of 99.96% and test accuracy of 96.99%, Alzheimer Disease Prediction CNN Model with a training accuracy of 95.63% and test accuracy of 98.68%, and Heart Disease Classifier with a training accuracy of 100% and test accuracy of 95.69% as part of the project. Also Expanded the project by adding a comprehensive section on Basic Deep Learning using Keras.

Projects

Face Recognition cum Reverse Search [GitHub] (Aug 2022 – Dec 2022)

- Developed an efficient face recognition system capable of learning from just 1 image.
- Implemented a reverse image search feature to retrieve metadata of similar images from the web.
- Recognized for excellence, winning the Goa Police Hackathon for the project.

Face Mask Detector [GitHub] (Feb 2021 – April 2021)

- Developed a Convolutional Neural Network (CNN) model with a training accuracy of 95.09% to accurately detect whether a person is wearing a mask or not.
- Utilized OpenCV for real-time webcam face detection, passed the detected face to the model, and displayed the results on the screen.

Re Cafe [GitHub] (April 2021 – May 2021)

- Developed a terminal-based application for café management using Python.
- Created multiple Python scripts to efficiently handle, manage, and store cafe-related data using CSV files as the database.

Google Trex Run Game Automation using OpenCV Template Matching [Video | GitHub] (April 2021 – May 2021)

- Worked on teaching Template Matching using OpenCV python for 2 hr workshop followed by 48 hr hackathon that got 2nd highest participation.
- Automated the Google Trex run game live in the workshop using the concept taught and judged the hackathon with a topic of automating games.

Autonomous Agricultural Analysis [*Under the Guidance of Dr. Satyanath Bhat, IIT Goa*] (June 2022 – Present)

- Utilizing Raspberry Pi and Arduino with various sensors for autonomous data collection from the field.
- Developing advanced models for autonomous agricultural analysis and generating comprehensive reports on land and surrounding atmosphere.

Skills

Programming Skills:	C, C++, Python, MATLAB, Git, Linux Bash, Haskell, VHDL, System Verilog, HTML, CSS and JavaScript (Basic Web Dev).
Frameworks/Libraries:	OpenCV, TensorFlow, Pandas, Numpy, Keras, Matplotlib, Seaborn, Boost C++, PyTorch, GitHub, Latex
Software Development:	AI, ML, Deep Learning, Computer Vision, Reinforcement Learning, IoT, OOPs and Web Development for AI/ML/DL.
Relevant Coursework	DSA, Probability and Statistics, ML, AI, Optimization, Neural Networks and Deep Learning, Improving Deep Neural Networks: Hyperparameter tuning, Regularization, and Optimization, Computer Architecture, Compiler, Algorithm Design, Modeling and Simulation of Systems, OS, Functional Programming, Computer Graphics using OpenGL.

Positions of Responsibility

General Secretary of Technical Affairs	Head position of IIT Goa Student Technical Council.	(2022 – 2023)
Overall Coordinator Cepheus'23	Leader of a team of more than 50 students.	(2022 – 2023)
Core Member:	Core Member of Google Developers Student Club in AI/ML Team.	(2021 – 2023)
Student Mentorship Program	Selected to mentor 1 student	(2021 – Present)

Achievements

- Collaboratively authored and submitted research paper titled ***'An Intelligent Pothole Management System Using Multi-Tasking CNN on Android'*** with **Dr. Sharad Sinha** to the prestigious **IEEE Indicon2023 conference**. (Present)
- State Topper in the Regional Mathematics Olympiad (RMO). (2019)
- Won third prize in the Goa Police Hackathon. (2022)

Extracurriculars & Hobbies

- Playing Football and making Drawings.
- Love watching Anime and Reading Manga.