

Sampad Kumar Kar

Email: sampaddavcsapur2001@gmail.com

sampadk04@cmi.ac.in

Mobile: +91-797-8620-354

Portfolio: sampadk04.github.io

Github: github.com/sampadk04

EDUCATION

- **Chennai Mathematical Institute** Chennai, India
M.Sc. - Computer Science; GPA: 9.00; transcript 2022 - present
- **Chennai Mathematical Institute** Chennai, India
B.Sc.(Hons.) - Mathematics and Computer Science; GPA: 8.82; transcript 2019 - 2022

EXPERIENCE

- **Michelin** Pune (Hybrid), India
Data Science Intern Dec 2023 - May 2024
 - **Projects:** TyreScan, TyreSnap
 - **Contribution:** In TyreScan project, deployed end-to-end pipelines for verifying and extracting tyre attributes via web-scraping, given the EAN Code. In TyreSnap, developed a calibrated confidence scoring system post-object, label, and text detection pipeline, reflecting a more human-aligned confidence score.
- **BNY Mellon** Chennai, India
Financial Modelling Intern (PPO) May 2023 - July 2023
 - **Project:** Enhancing Short Term Cash Flow Model
 - **Contribution:** Improved BNY Mellon's STCF forecasting by introducing quantitative methods for identifying seasonal patterns, enhancing accuracy across LOBs and currencies. Conducted statistical tests and modeling to validate the quantitative framework, which was subsequently submitted to Risk for audit and adoption. *Report*
- **Trumpf** Chennai, India
Computer Vision Intern Nov 2022 - Apr 2023
 - **Project:** Sheet Metal Part Identification
 - **Contribution:** Developed a deployable pipeline for sheet metal part identification, using transfer learning on pre-trained models to classify images into 10 predefined categories and output the corresponding CAD files. *Report*
- **Launchpad.ai** Remote
Machine Learning Intern July 2022 - Sep 2022
 - **Project:** Fitness Activity Recognition (in collaboration with Nike)
 - **Contribution:** Collaborated with Cohort'23 to create a model for comparing trainee and expert fitness videos. Utilized 'Dynamic Time Warping' on coordinates extracted via 'Mediapipe BlazePose' to handle variations in camera angles. *Report*
- **Cheenta** Remote
Mathematics Instructor Oct 2019 - Apr 2022
 - **Mathematics Olympiad Instructor:** Taught various courses for Indian National Mathematics Olympiads on various topics like Geometry, Number Theory, Algebra etc.

NOTABLE PROJECTS

- **Clustering - Fast Text based Clustering:** Developed four clustering techniques, including two optimized versions of sklearn's KMeans and two novel techniques designed from scratch to efficiently cluster large datasets using 'Jaccard Similarity' as the metric. *GitHub* (April '22)
- **Computer Vision - Facial Emotion Detector:** Created a real-time facial expression detector using Deep Residual Networks upon the *Kaggle Facial Expression Dataset*, with deployment for live webcam-based emotion recognition. *GitHub* (Jan '23)
- **Large Language Models - Local GPT for Documents:** Developed a local, internet-independent framework for querying and chatting with users' *Private Documents* in natural language using LLMs, while also identifying document references from the knowledge base. *GitHub* (Aug '22)

TA EXPERIENCE

- **Chennai Mathematical Institute** Chennai, India
Teaching Assistant Jan 2023 - present
 - **Data Mining and Machine Learning:** Instructors: Prof. Madhavan Mukund, Prof. Pranabendu Misra
 - **Advanced Machine Learning:** Instructors: Prof. Pranabendu Misra
 - **Natural Language Processing:** Instructors: Prof. Ramaseshan Ramachandran

HONORS AND AWARDS

- Shriram Scholarship (Full Tuition Fee Waiver and Stipend at CMI for Masters) - 2022 - present
- Shriram Scholarship (Full Tuition Fee Waiver and Stipend at CMI for Bachelors) - 2019 - 2022
- NTSE Scholar, INMO Merit Awardee - 2017
- KVPY, RMO, NSEP, NSEA Qualifier - 2017-18
- JEE Advanced AIR **4062**, JEE Mains AIR **3042** - 2019

TECHNICAL SKILLS

- **Languages:** Python, R, Matlab C++, Java, Haskell
- **ML Frameworks:** NumPy, Pandas, Scikit, PyTorch, transformers, LangChain, NLTK, OpenCV, Matplotlib, Seaborn