Swadesh Jana

✉ swadeshjana@gmail.com
🌐 swadesh13.github.io

ॐ Swadesh Jana · 🔗 swadeshjana · ⌨ Swadesh13 · 🐦 swadeshjana13 · k swadeshjana

EDUCATION

Masters in Machine Learning, University of Tuebingen — Tuebingen, Germany
2023–current

B.E. (with Hons.) in Computer Science and Engineering, Jadavpur University — Kolkata, India
CGPA: 9.4/10 - First Class Distinction with Honours (add. 20 credits) — 2019–2023

Higher Secondary, South Point High School — Kolkata, India
Basic Sciences with Computer Science, AISSCE (XII) 2019: 96.4 — 2017–2019

Secondary, South Point High School — Kolkata, India
AISSE (X) 2017: CGPA- 10/10 — 2005–2017

EXPERIENCE

TCS Research and Innovation Labs — Mumbai, India
Research Intern at PERC Lab — May–Oct 2022

- Vision model compression using lottery ticket hypothesis, channel pruning, and knowledge distillation
- Coding a generic algorithm to input parent model along with user requirements and output the best inference model for the given hardware and software limitations

Google Summer of Code at Red Hen Lab — Online
Research Intern — Jun–Aug 2021

- Hand Gesture Recognition in Videos using OpenPose, 3D CNN, and LSTM. Project link: GSoC page
- Invited to Oxford IMCC online talk: YouTube link. Accepted in a symposium at ISGS, 2022: YouTube link
- Supervisor – Dr. Peter Uhrig

Jadavpur University — Kolkata, India
Undergraduate Student Researcher — 2020–2023

- Conducting research in deep learning and computer vision topics such as image processing, geoinformatics, social network analysis and medical data analysis.

PROJECTS

Check the detailed full list of current projects at https://swadesh13.github.io/projects.html

- **Rethinking Convolutions: Image Segmentation in Medical images** — Aug 2022–Feb 2023
  - Developing fuzzy atrous convolutional layers for better image segmentation in medical datasets. Paper presented at IEEE ASPCON 2023 conference.
  - Supervisor – Dr. Ujjwal Maulik

- **Air pollution prediction using Spatio Temporal Graph CNN** — Oct 2021–Feb 2022
  - Application of Spatio-Temporal Graph-based CNN model for air pollution prediction. Manuscript under review.
  - Codebase: github.com/Swadesh13/Pollution-STGCN
  - Supervisor – Dr. Sarbani Roy

- **ADDS: Attention-based Detection and Trajectory Prediction in Counter-Drone Systems** — Jan 2022

- Presented concept of Transformer Encoder-Decoder based 2D trajectory prediction of drone in videos at MLDS Conference, 2022. Inspiration from Anticipative Video Transformer.

- **Image Classification & Object Detection on road anomalies dataset** Mar–Sep 2021
  - Two papers on classification and object detection models on a self-annotated collection of road anomaly images. One manuscript published in Springer MONE (10.1007/s11036-023-02118-6), another under review.
  - Supervisor – Dr. Sarbani Roy

- **EQ - Virtual Queue for the new normal** August 2020
  - Developed web app backend using Node js and MongoDB for the HCL Better Health Hackathon.
  - Code: github.com/Swadesh13/ShopSafe

- **Neural Style Transfer** April 2020
  - Short coding and documentation Project on Image generation by combining content and style images.
  - Code: github.com/Swadesh13/Neural-Style-Transfer

SKILLS

- **Languages:** C, C++, Python, Bash, Java, Javascript
- **Frameworks:** PyTorch, TensorFlow, Keras, Scikit-Learn
- **Backend:** Node JS, Servlets
- **Frontend:** HTML, CSS
- **Database:** SQL, MongoDB
- **Other Tools:** Git, Jupyter, LaTeX
- **OS:** Linux (Ubuntu)

LANGUAGES

- **English:** Fluent
- **Bengali:** Native Language
- **Hindi:** Proficient

ACHIEVEMENTS

- Selected for the Google Research Week 2023 at Bangalore, India (Jan 29-31, 2023) Jan 2023
- Jagadis Bose National Science Talent Search Senior Scholarship 2019–2023
- Rank 49 (Top 2%) in SIIM-ISIC Melanoma Classification, 2020 (Kaggle) 2020
- Letter of Recognition from West Bengal State for AISSCE 2019 results 2019

EXTRACURRICULAR ACTIVITIES

- Mentor at GSoC, Red Hen Lab Jun–Aug 2023
  Extended work on hand gesture recognition based on GSoC 2021 work.
- Secretary at DevHub, Jadavpur University Jan 2021–Feb 2022
  Managing a community-based developers group. Session videos available on YouTube.
- Sports & Games
  Tennis, Cricket, Chess
- Musical Instrument
  Indian Bamboo Flute