

Swadesh Jana

CSE Undergraduate | Student Researcher | Developer

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EDUCATION

Jadavpur University

B.E. with Honours in Computer Science and Engineering, GPA: 9.36/10 (Avg. of 7 sems)

Kolkata, India

2019–2023

South Point High School

Senior Secondary Certificate Examination in Science, AISSCE 2019 (XII): 96.4%

Secondary School Examination, AISSE 2017 (X): CGPA- 10/10

Kolkata, India

2005–2019

EXPERIENCE

TCS Research and Innovation Labs

Research Intern

Mumbai, India

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
- Supervisor – Dr. Nupur Sumeet

Google Summer of Code at Red Hen Lab

Research Intern

Online

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

Undergraduate Student Researcher

Kolkata, India

2020–current

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

PROJECTS

Check full list of projects with more details at swadesh13.github.io/projects.html

- **Sketch-based Multiview 3D Image Retrieval using Convolutions and Transformers** Feb 2023–current
 - Developing a new convolution and transformer-based model for 3D Image Retrieval from query sketch images
 - Supervisor – Dr. Biplab Banerjee
- **Landslide detection and Metadata generation from images using computer vision** Jan 2023–current
 - Applying computer vision models on images to detect landslides and other metadata such as populated area, nearby roads, water bodies, forests, ongoing rescue operations
 - Supervisor – Dr. Sarbani Roy
- **Face Spoofing Detection** Oct 2022–Mar 2023
 - Classification of spoofed images of humans from real ones using image processing and deep learning methods.
 - Supervisor – Dr. Sanjoy Kumar Saha

- **Rethinking Convolutions: Image Segmentation in Medical images** Aug 2022–Feb 2023
 - Developing fuzzy atrous convolutional layers for better image segmentation in medical datasets
 - 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, Java, Javascript
- **Frameworks:** PyTorch, TensorFlow, Keras, Scikit-Learn
- **Backend:** Node JS, Servlets
- **Frontend:** HTML, CSS, React
- **Database:** SQL, MongoDB
- **Other Tools:** Git, Jupyter, L^AT_EX

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

- 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