SWARNABHA ROY

B/2D, Rajwada Estate, 66 NSC Bose Road, Mahamayatala, Garia, Kolkata - 700084, India
Phone: +91-9433492150; E-mail: swarnabha4399@gmail.com

ACADEMIC QUALIFICATION

Bachelor of Technology, Computer Science & Engineering; August 2017 - June 2021(expected)
Institute of Engineering & Management, Kolkata, affiliated to Maulana Abul Kalam Azad University of Technology, India; GPA: 8.77/10 (up to 6th semester)

Class 12 (AISSCE'17) with Science, Central Board of Secondary Education, India; May 2016 - May 2017
South Point High School, Kolkata, India; Aggregate: 90.6%

Class 10 (AISSE'15), Central Board of Secondary Education, India; May 2014 - May 2015
South Point High School, Kolkata, India; CGPA: 10/10

INTERNSHIPS

Indian Institute of Technology, Roorkee
Undergraduate Research Intern
Duration: June 2019 – Present
Role:

- Implemented the paper 'A position and rotation invariant framework for sign language recognition (SLR) using Kinect' independently, achieving the same results as claimed by the experiment in the paper. The framework is capable of recognizing occluded sign gestures using Hidden Markov Model (HMM) and has been tested on a dataset of 2700 gestures
- Presently working on using multi-layered CNN-LSTMs and Autoencoders to make the model more robust and improve the positional and rotational invariance

Help Age India, Kolkata
Intern
Duration: December 2018 – January 2019
Role:

- Worked with the caregivers and support team to analyze the situation and the problems of the elderly population in Kolkata, especially the suburbs
- Documented the work-flow and prepared a presentation of my analysis along with detailed case studies

ACADEMIC PROJECTS

Title: Emotion Recognition from Video Snippets
Objective: To take video snippets as input and identify the emotion of the person/ character in the video based on facial gestures and dialogue/ voice
Duration: September 2020 – Present
Team Size: 2
Individual role: Responsible for emotion recognition from facial gestures in the video

Title: COVID-19 QnA and Mask Recognition System
Objective: To take a source from the user and answer questions based on the context and to identify if a person is wearing a face-mask or not in an image or video
Duration: August 2020 – Present
Team size: 1

Title: Image Denoising and Super-resolution of Images, and Generation of Deepfakes
Objective: To denoise and improve the resolution of noisy and blurry images using autoencoders and to generate synthetic images using DCGANs
Duration: June – July 2020
Team Size: 1

Title: Controlling Electronic Devices using Hand Gesture Recognition and IoT
Objective: To identify hand gestures from a pre-trained pool of gestures and perform different activities assigned with different gestures through a Raspberry Pi module
Duration: August – September 2018
Team Size: 4
Individual Role: Responsible for developing the gesture recognition model

PAPER PRESENTATIONS

- Published a paper on '*Intelligent Traffic Control System: towards Smart City*', October 2019
  IEEE 10th Annual Information Technology, Electronics & Mobile Communication Conference (IEMCON)
  DOI:10.1109/IEMCON.2019.8936188

- Published a paper on '*GSM Based Irrigation System',* October 2019
  IEEE 10th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON)
  DOI: 10.1109/UEMCON47517.2019.8993026

ADDITIONAL COURSES

- Python(Advanced) Certification on HackerRank, September 2020
- Deep Learning Specialisation by deeplearning.ai, Coursera, August 2020
- Building Web Applications in PHP course by the University of Michigan, Coursera, August 2020
- Satellite Photogrammetry and its Application by Indian Institute of Remote Sensing (ISRO), July 2020
- Visual Perception for Self-Driving Cars course by the University of Toronto, Coursera, March 2020
- Mathematics for Machine Learning Specialisation by Imperial College London, Coursera, January 2020
- The Fundamentals of Digital Marketing by Google EMEA 20and IAB Europe, January 2019
- Machine Learning by Prof. Dr. Andrew Park, Thompson Rivers University, Canada, September 2018
- Internet of Things Summer training, Internshala, July 2018

AWARDS AND ACHIEVEMENTS

- Google Research India AI Summer School 2020, August 2020
  Selected among the 150 participants from pan-India for a three-day-long advanced Machine Learning School (taught at the Graduate Level) to discuss the state-of-the-art of a variety of ML Techniques and also discuss their limitations and critiques

- Won second prize in Diversion 2k18, September 2018
  Diversion 2k18 was an inter-college undergraduate technical project competition organized by the ACM Student Branch of IEM, Kolkata

TECHNICAL SKILLS

Programming: C, C++, Java, Python, LaTeX, SQL, HTML, CSS, PHP, JavaScript, Prolog
Data Analysis & Machine Learning: pandas, NumPy, Keras, TensorFlow, scikit-learn, OpenCV, nltk
Software: Jupyter, Google Colab, PyTorch, PacketTracer, MySQL, Google Cloud
Hardware: Arduino, Raspberry Pi, Embedded Systems

EXTRACURRICULAR ACTIVITIES

- Member, IEEE IEM Student Branch, IEEE Computer Science, Kolkata Section, January 2018 – Present
- Member, DSC IEM Student Chapter, Google Developers Student Chapter, Kolkata, January 2019 – Present
- Core Committee Member, IEM Quizzard Club, Institute of Engineering & Management, Kolkata, August 2018 – Present; General Secretary, September 2018 – January 2020
- Volunteer/ Organising Committee member for college tech-fest 'Innovación', college cultural fest 'IEMPACT' and events organized by IEEE, 2018– Present
- Grade 6 in Music Theory, London College of Music, SSLCM Kolkata, January 2019; Grade 8 in Electronic Keyboard. January 2017
- Advanced Senior Diploma in Creative Painting, Vidyasagar Academy, Nehru Children Museum, West Bengal, March 2014