Mainak Deb

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DOB: November 9th, 2000

Education

Expected 2023 **Bachelor's of Technology**, *Electrical and Computer Engineering*, ASE, Amrita Vishwa Vidyapeetham, Kollam, India. Current GPA: 8.3/10.0.

2016 - 2018 **Higher Secondary**, Amrita Vidyalayam, Kolkata , India. Marks: 89%.

2016 **Secondary**, Amrita Vidyalayam, Kolkata, India. GPA 8.4/10.0.

Areas of Interest

Image processing, Computer Vision, Deep Neural Networks, GANs

Experience

July 2021 - **Google Summer of Code 2021 Student Intern @INCF**
Worked on DevoLearn, which aims to leverage deep learning to accelerate developmental biology research. Trained deep neural networks from scratch to help map the embryogenesis process in C. elegans worm embryo and hosted models live on the web. Feel free to check out the detailed report and work repository

Achievements

April 2021 - **3rd Prize - MLOps for Good Hackathon**
Organized by Microsoft, Iguazio and MongoDB
Built and hosted Deepfake Shield - an online tool that uses deep-learning to detect deepfakes in an image.

April 2021 - **First Prize (Education Track) - Hello World Hackathon**
Organized by CalHacks (University of California, Berkeley)
Built SignLingo - A deep learning based sign-language tutor which works via live webcam video feed.

October 2020 - **First Prize - Lights, Camera, Hacktion! Hackathon**
Organized by Major League Hacking
Developed a system that uses Computer Vision to automatically pause/play videos depending on whether the user is paying attention to the screen.

October 2020 - **First prize (Google Cloud track) - Hero Hacks**
Organized by Major League Hacking
Built a Java based mobile application that aims to eliminate the use of physical paperwork in hospitals, pharmacies, and clinics to ensure minimal physical contact for the consumers as well as doctors and staff.

September 2020 - **Third Prize - New Friends New Hacks**
Organized by Major League Hacking
Built an efficient Computer Vision based face mask detection system powered by OpenCV.

Relevant Projects

December 2020 - **Deceptive Digits**
The aim of this project was to conditionally generate realistic images of handwritten digits. This was accomplished by training two PyTorch based custom neural networks (with label embeddings) simultaneously in a GAN framework.

November 2020 - **Eyes on the Road**
The aim of this project was to train a PyTorch based Deep Convolutional Neural Network to classify driver activity. The testing accuracy was 93.9%, but I also tested the model on some real life images that I clicked just to be on the safe side.

August 2020 - **Bank me Later**
Trained a PyTorch dense-net to predict if a client subscribes to a term deposit or not using attributes like job, marital status, age etc with an accuracy of 94%

March 2020 - **Deep Wine Connoisseur**
The quality of wine is directly correlated to its chemical composition, I used these chemical attributes to train a PyTorch dense-net to predict its quality, and it worked!

February 2020 - **Facial Expression Classifier**
Trained a PyTorch based Deep Convolutional Neural Network to classify human facial expressions from images. Deployed on live webcam feed, used openCV's Haar-Cascades to crop into the facial region before inference.

Technical Skills

Programming	Python, C
Primary Libraries	PyTorch, OpenCV, NumPy, SciPy, Pandas, PIL
OS	GNU/Linux, Microsoft Windows
Tools	Jupyter Notebooks, Git, conda
Web Development	FrontEnd- HTML, CSS BackEnd- Flask

Volunteer Work and Extra-Curricular Activities

2010 - 2018 **Black belt in kyokushin karate:** I've been a part of the martial arts class in my school and participated in multiple tournaments in Kolkata, India under the mentorship of Sensei Bejoy Dhara, branch chief and country representative for IKO Matsushima.

2016 - 2018 **Co-ordinated charity events to support villages:** I was one of the co-ordinators who helped put together events where students donated basic medical supplies and other utilities which were to be given to the poor and needy children in villages near Kolkata, India. This programme was a part of Mata Amritanandamayi devi's (Popularly known as "Amma") efforts to help the poor and the needy throughout the world.

2016 - 2018 **Helped co-ordinate clean up drives in areas near our school as a part of "Amala bharatam":** I was one of the co-ordinators who helped put together events where students donated basic medical supplies and other utilities which were to be given to the poor and needy children in villages near Kolkata, India.

Languages

English, Hindi, Bengali