Nixon Dutta

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SUMMARY

Currently, I am 1st year Master's student in Iwate Prefectural University. I am also working as a system developer at an IT company namely Cybercore, which works in the fields of image processing, image recognition and artificial intelligence. My job is to solve real world problems in the field of computer vision by implementing related recent research papers. After completing my Bachelor degree in Computer science and Engineering, I came to Japan to pursue my masters degree under the supervision of Prof. Basabi Chakraborty.

EDUCATION

Iwate Prefectural University — Takizawa, Iwate
Software and Information Science — GPA: 3.2 — April-2020

Institute of Engineering & Management — Kolkata, India
Computer Science and Engineering — GPA: 7.85/10.00 — Jul 2014 – Aug 2018

WORK EXPERIENCE

Company Name - **Cybercore** — Designation - **System Developer** — Morioka, Iwate
Current Project - Automatic Parking space detection and allocation System — December 2020 - Present
Details - Using CCTV camera vision, the system will detect the current vehicles, and their position in the parking lot. Using this information, the system will allocate space for the upcoming vehicles.

CORE SKILLS

Python, TensorFlow, PyTorch, OpenCV

RESEARCH INTEREST

Deep Learning, Probability Theory, Statistics, Algorithms, Computer Vision

Current Research

Digital Breast Tomosynthesis Lesion Detection and Classification

Currently I am trying to find the best algorithm to detect lesion from digital breast tomosynthesis images and classify between benign and malignant tumor. Generally, breast imaging radiologists read the mammograms. All the radiologists need to be fellowship trained and specialized in mammography, breast MRI and breast ultrasound. And not all radiologist are breast imaging specialist. Therefore, a computer aided diagnostic system is needed to help health practitioner in case Breast imaging radiologists are not available. My objective is to build a computer aided diagnostic system to help detect the lesion from 3-D mammography and help distinct between benign and malignant tumor.

PROJECT WORK

Facial Expression Recognition *Ongoing PBL course work* — Oct 2020 – Jan 2021

- In this project, we will detect 7 different expressions (Neutral, Angry, Happy, Sad, Disgust, Surprise and Fear) on human faces using deep Neural Networks. Till now Pre-trained(ImageNet) InceptionV3 model gave us the best accuracy of 74% on validation dataset. We used 7 inception blocks and on top of that we added extra 4 fully connected layers. The project map as of now is as follows – The computer will start taking the video by webcam. Then our module will process each frame to detect a person. If detected, we will locate the face of the person in the image. After taking the face portion of the image, we apply our trained model(InceptionV3) on the image to detect the facial expression. As output, we will show a rectangle box around the face with the expression label.

Network simulator using distance vector routing protocol *Final Year Project* — Aug 2017 – June 2018

- Made a network simulator using distance vector routing protocol by JAVA based on Bellman Ford Algorithm under the guidance of Prof. Pinaki Karmakar. The network simulator tests algorithm as it is not feasible to test algorithms in real world networks. It takes configurations of the subnet as input and provides multiple statistics of the routers and links as outputs. The simulation helps to achieve an optimal path that reduces the cost of routing.

RESEARCH PAPER PUBLICATIONS

Clustering of ETF Data for Portfolio Selection during Early Period of Corona Virus Outbreak (Submitted)
Hidetoshi Ito*, Akane Murakami**, Nixon Dutta*, Yukari Shirota**, and Basabi Chakraborty*

An Annotation System to Annotate Healthcare Information from Tweets
Conference – International Conference on Emerging Technology in Modelling and Graphics, IEMGRAPH 2018, 6th to 7th Sep, 2018. Publication – Springer's Advances in Intelligent Systems and Computing Series

Using Browser Cookies for Event Monitoring and User Verification of an Account
Paul, P., Biswas, B. A., Khalid, Z., Biswas, S., Dutta, N., Saha, H. N., Das, M. (2018). Using Browser Cookies for Event Monitoring and User Verification of an Account. 2018 IEEE 9th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON). doi:10.1109/iemcon.2018.8615105

An Internet of Things (IoT) Based System to Analyse Real-time Collapsing Probability of Structures
Paul, P., Dutta, N., Biswas, B. A., Das, M., Biswas, S., Khalid, Z., Saha, H. N. (2018). An Internet of Things (IoT) Based System to Analyze Real-time Collapsing Probability of Structures. 2018 IEEE 9th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON). doi:10.1109/iemcon.2018.8614743

INTERNSHIP

Intern, Marketing Management, Indian Institute of Management, Lucknow May 2017 – Jun 2017
Remote Internship in Marketing Management at IIM Lucknow under the guidance of Prof. Sameer Mathur.
- Applied basic concepts of marketing to solve business cases published by Harvard Business School.
- Prepared a Marketing Plan for an Android App

AWARDS / ACHIEVEMENTS

- Awarded Junior school scholarship for obtaining 1st rank in division level
- Toastmasters Competent Leader Award (2017): For exhibiting exemplary leadership skills and completing 10 projects on the leadership track

EXTRA-CURRICULAR ACTIVITIES

Vice President Public Relations of Salt Lake Toastmasters Club (A unit of Toastmasters International) (Membership ID 5712422) Jun 2017 – Dec 2017
- Launched website for club.
- Handled promotions on digital media for over 10 events
- Mentored four members in developing good communication and leadership skills by helping them with their roles and speeches in Toastmasters.

The Secretary General of IEM Model United Nations 2016 Feb 2016 – Sep 2016
Being the head of the Secretariat of the event, my main objective was to conduct it successfully, by arranging every possible necessities and needs for the committees, the delegates and the organizing committee. It included stating diplomatic agendas for the respective committees, addressing all the members included in the event, coordinating meetings presentations, maintaining proper budgets, arranging accommodations for all delegates and finally maintain proper rules procedures on all the three days of committee. The event was a huge success with about 200 delegates from all over the nation. Our organizing committee had 43 members and the positions were decided by maintaining a proper hierarchy. The Secretariat Executive Board, combined had another 12 members.

REFERENCES

Basabi Chakraborty, Ph.D
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