MD ANIS SARKER

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EDUCATION

Independent University, Bangladesh, Dhaka, Bangladesh   Jan. 2015 - Dec. 2018
BS, Computer Science   CGPA: 3.14/4.00
Thesis: Land Use and Land Cover Segmentation Using Deep Neural Network

RESEARCH EXPERIENCE

Center for Computational and Data Sciences   Dhaka, Bangladesh
Research Assistant   Feb. 2020 - Dec. 2021

- Conducting in-depth analysis of advanced deep learning models, scrutinizing the entire architecture, and devising strategies for system optimization to enhance overall performance.
- Acquired satellite and aerial imagery for preprocessing and post-processing steps in dataset preparation.
- Allocating group of students from lab and courses to create dataset. Explaining and assigning part of works to fellow-people to achieve the project demand.
- Developing comprehensive pipelines to streamline the entire process, emphasizing continuous integration and system maintenance.
- Staying up-to-date with the latest research publications in the relevant field and contributing to the scientific community through scholarly articles and documentation.

Independent University, Bangladesh   Dhaka, Bangladesh
Research Assistant   July. 2018 - Jan. 2020

- Collecting spatial data, satellite images of Sentinel-2, Landsat-8 satellites from USGS earth explorer and geospatial tools to collect data.
- Searching benchmark dataset like Gaofen-2, ISPRS Potsdam Benchmark dataset and create training ready dataset.
- Finding and studying past and state-of-the-art GIS study of classification, segmentation, time series analysis, deforestation, urbanization.
- Writing and analyzing dataset and code of FCN-8 and VGG-19 for the data and train/test deep-learning model to improve accuracy and performance.
- Writing and submitting manuscripts to conferences for publications.

TEACHING EXPERIENCE

Independent University, Bangladesh   Dhaka, Bangladesh
Teaching Assistant

- Assigned courses CSC101 - Introduction to Programming, CSC203 - Data Structure, CSC317 - Numerical Method
- Tutored lab classes. Instructed C++ and Matlab programming language.
- Prepared questions for quiz and sorted scripts and assignments.

PROFESSIONAL EXPERIENCE

AinoviQ IT Ltd.   Dhaka, Bangladesh
Artificial Intelligence Engineer   Feb. 2022 - Present

- Studying and exploring related literature on the generative adversarial networks, computer vision methodologies, and cutting-edge research in the realm of virtual try-on applications.
- Using python libraries selenium, scrapy to allocate data from different sources.
- Designed and created a PyQt5 desktop software for aligning target and reference images to sort, categorize and clean data.
- Examined and modified and guided team members on various dependency ml tools and projects such as densepose from facebookresearch to estimate human pose, openpose for body keypoints, graphonomy for human body parsing and image processing tools to pre-process data and prepare the datasets for different networks.
- Modeled and summarized the project plan and workflow beginning from data scraping to deployment.
- Managed team for regular updates and maintenance.

TechDojo   Dhaka, Bangladesh
Software Engineer Intern   Oct. 2019 - March. 2020

- Prepared and delivered ideas and wrote codes to design and implement android application using react native.
- Designed data model to store information and operated with firebase service.
- Responsible for working on cross-platform house rental application.

SKILLS

- **Programming:** Python, C++, Java, Matlab, Javascript.
- **Framework:** Pytorch, Tensorflow, Keras, Flask, Nodejs, Reactjs.
- **Library:** Opencv, Numpy, Pandas, Geopandas, Matplotlib, Scrapy, Arcpy, Gdal.
- **Geospatial Analysis:** Qgis, Arcgis.
- **Other:** Latex, Git, Selenium, Markdown, Android.
- **Relevant Coursework:** Machine Learning, Image Processing, Numerical Analysis, Linear Algebra.

PUBLICATIONS

- O. Paul, ABS Nayem, **A. Sarker**, Md.A. Amin, A.A. Ali, AKM M. Rahman, **BD-Sat: High-resolution Land Use Land Cover Dataset with Benchmark Results for Developing City of Dhaka, Bangladesh**.(Proceedings).
- Q. Cheng, AKM M. Rahman, **A. Sarker**, ABS Nayem, O. Paul, A.A. Ali, Md. A. Amin, R. Shibasaki, M. Zaber, **A Deep-learning framework customized for novel categorization method to classify cities of the developing world**, Sensors Journal, MDPI, 2021.
- F.F. Niloy, Arif, ABS Nayem, **A. Sarker**, O. Paul, Md.A. Amin, A.A. Ali, AKM M. Rahman, **A Novel Disaster Image Data-set and Characteristics Analysis using Attention Model**, International Conference on Pattern Recognition, 2021.
- Q. Cheng, AKM M. Rahman, **A. Sarker**, ABS Nayem, O. Paul, A.A. Ali, Md. A. Amin, R. Shibasaki, M. Zaber, **Deep-learning coupled with novel categorization method to classify the urban environment of the developing world**, International Conference on Signal Processing and Machine Learning, 2021.
- ABS Nayem, **A. Sarker**, O. Paul, A. Ali, Md. A. Amin, AKM M. Rahman, **LULC Segmentation of RGB Satellite Image Using FCN-8**, SLAAI-International Conference on Artificial Intelligence, 2019.

PROJECTS

Virtual Try-on
Project Link: No link

- Applied machine learning, deep learning, and computer vision techniques to try on different type of clothes on person.
- Specialized in segmentation and Generative Adversarial Networks (GANs) modeling.
- Densepose, openpose, detectron2 such human body segmentation, parsing and dense mapping were used while processing the generative model.

Dropdead Gorgeous
Project Link: No link

- Developed a computer vision application for virtual makeup try-on.
- Focused on creating a user-friendly experience for women to experiment with various makeup styles.
- Used python libraries opencv, numpy, pillow, mediapipe for the image processing. Flask, socketio for api services.
- Reactjs and tailwindcss is used for the front-end development.

KEEPIN
Project Link: `https://github.com/ansarker/keepin`

- A secure MERN web app for storing and managing login and financial information.
- Technologies: Nodejs, Reactjs, MongoDB database

NPRA
Project Link: No link

- An Android app built with React Native for pill and medicine recognition. Flask is employed on the server-side for computer vision, allowing the identification of pills and medicines, which are then sent to the client side.
- Technologies: React Native, Python, Flask

EXTRACURRICULAR ACTIVITIES & INTERESTS

- Volunteering, Social activist(Agrodhabon)
- Travelling
- Wandering
- Football
- Trekking

REFERENCES

Available on request.