Sushmita Das

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Education

Carnegie Mellon University (CMU) 4.0/4.0
MS in Electrical and Computer Engineering Jan. 2021 – May 2022

Assam Engineering College 81.7/100
BE in Electrical Engineering Aug. 2016 – Sept. 2020

Publication

Sushmita Das, Ankur Deka, Yuji Iwahori, M. K. Bhuyan, Takashi Iwamoto, Jun Ueda, *Contour-Aware Residual W-Net for Nuclei Segmentation*, KES 2019 special session on Computational Intelligence System and Applications.

Experience

Research Assistant, Carnegie Mellon University | *Power Grid Reliability Data Analysis* Jan 2022 – Present
- Analyzing Electricity Consumption Data of Nigeria to help make power related decisions such as regulating the power-cuts.
- Objectives are to perform data cleaning, analyze available continuous time periods and develop summary statistics.

Research Assistant, Carnegie Mellon University | *Image Segmentation, Deep Learning* Sept 2021 – Dec 2021
- Helped in creating a new dataset to perform Bird Eye View (BEV) Satellite Image Segmentation for navigation.
- Adapted the W-Net model for multiclass road segmentation. The W-Net model outperformed a baseline U-Net model.

Summer Intern, Carnegie Mellon University | *Deep Learning, Computer Vision* June 2021 – Aug 2021
- Developed a driver alert system on Nvidia Jetson Xavier NX with pre-trained object detection models - Mask RCNN, YoloNet, MobileNet.

Research Intern, Chubu University | *Medical Image Segmentation* Sept 2018 – March 2019
- Developed a deep learning based model, Contour-Aware Residual W-Net (WRC-Net), consisting of double U-Net for nuclei segmentation and evaluated it on real Hematoxylin and Eosin stained cell images.
- It showed better overall performance (higher dice coefficient) against previous state-of-the-art nuclei segmentation methods.

Projects

Weather vs. Electricity Consumption Data Analysis | *Pandas, Numpy, Scikit-learn, Excel* Jan. 2022 - Jan. 2022
- Performed data cleaning and analyzed weather and electricity consumption data of one year period from France.
- Used Multiple Linear Regression for forecasting energy consumption.

A/B Testing | *R, SQL, Tableau, Qualtrics* Oct. 2021 - Dec. 2021
- Conducted a survey on 200 people and performed Ordinary Least Squares regression to find the effect of providing the reading time on the willingness to read an article in a domain of interest and analyzed the outcome of interest across various covariates.

Customer Satisfaction Data Analysis | *SAS Enterprise Miner, Tableau* Aug 2021 – Oct 2021
- Performed data analysis on airline customer data to improve customer satisfaction rates by using unsupervised learning (K-means Clustering) and supervised learning (Decision Tree, Neural Network).
- Concluded that business class travellers and customers taking short flights were on average more satisfied.

Animal Classification | *Python, Scikit-learn, Keras, Tableau* Aug 2021 – Dec 2021
- Performed two-class and multi-class animal classification using Support Vector Machine (SVM), Convolutional Neural Network (CNN) and compared their performance.
- Used CNN as feature extractor and SVM as classifier to form an end to end differentiable model which achieved 81% accuracy.

Cyclist Data Analysis | *SQL, Tableau* June 2021 – July 2021
- Analyzed a cycle rental company data from April 2020 to May 2021 to determine how customers with membership and without membership use the rental services differently.
- Suggested ways to encourage cyclists to register for membership.

Bachelor Thesis Project | *Arduino, MIT App Inventor* Aug 2019 – June 2020
- Devised a voice controlled robot. Developed the hardware robot, programmed an Arduino micro-controller unit and built an android app using the MIT App Inventor.

Technical Skills

Languages: Python, C/C++.
Analytics & Data Mining: SAS Enterprise Miner, SQL.
Visualization Tools: Tableau, PowerBI.
Developer Tools: Jupyter Notebook, R Studio, Matlab, Octave.
Libraries: Scikit-learn, Pandas, NumPy, Matplotlib, Keras, PyTorch.
Cloud: AWS, GCP.

Courses

Intro to ML (Python) Pattern Recognition Theory (Python) Neural Signal Processing (Matlab)
A/B Testing (R) BI and Data Mining (SAS Enterprise Miner) Google Professional Data Analytics (SQL, Tableau, Excel, R)

Ongoing: Data Analytics (Python) Big Data Science (Python) Data Science for Technology, Innovation and Policy (R)