Shruti Shrestha
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| Portfolio Website | GitHub | Google Scholar | Medium |

EDUCATION

Georgia State University, Master of Data Science and Analytics — Aug 2021 - Dec 2022
Tribhuvan University, Bachelor in Computer Engineering — Oct 2013 - Sept 2017

Relevant Courses: Fundamental of Data Science, Probability Theory and Statistics, Database System, Machine Learning, Deep Learning, Big Data, Data Mining, Data Structures and Algorithm

TECHNICAL SKILLS

Programming Language/Framework: Python, PyTorch, Tensorflow, SQL, Java, Numpy, Scipy, Pandas, Cupy, CUDA, Bash
Data Science: Computer Vision, Regression/Classification Models, ML Model Deployment/ Management, Data Mining, Image Processing, Data wrangling/modeling, Data Visualization
Tools: AWS, GCP, NVIDIA DALI, Tableau, Github, Docker, gRPC, Rest API, Excel, Linux/Mac OS, Kubernetes

WORK EXPERIENCE

Machine Learning Engineer Intern — May 2022 - Present
Georgia State University, Research Solutions — Atlanta, Georgia
- Optimization of systems: CPU, GPU, memory usage and load-times. Decreased deep learning training run time by 30%
- Perform NVIDIA DALI for software performance benchmarking, profiling, and optimizations
- Conduct research in Graph neural network for intrusion-detection-system

Graduate Research Assistant — Aug 2021 - April 2022
Georgia State University, Data Mining Lab — Atlanta, Georgia
- Conduct Research, implement, and test **deep learning architectures** and **physics-based evaluation metrics** for Solar Magnetograms Super Resolution Project
- Performed **data labeling, data exploration, data cleaning**, and **hyper-parameter** tuning to optimize the accuracy and loss for the super-resolution procedure of the Helio-seismic and Magnetic Image (HMI) dataset
- Developed **Solar Event Database** to get the association between Solar Flares, Coronal Mass Ejection, and Active Region
- Apply CNN based models to predict flares present in ≥M1.0, where GoogLeNet produced TSS of 71% and HSS of 41%

Research Assistant — Jun 2020 - Jul 2021
Nepal Applied Mathematics and Informatics Institute for research (NAAMII) — Kathmandu, Nepal
- Developed and implemented a deep learning model to perform semantic image segmentation of polys from endoscopy image embedding **Criss-Cross Attention Mechanism** with **Resnet-34** and **Transposed Convolution**
- **Published a paper** and presented the implementation of ensemble method on ResNet-34 and EfficientNet-B2 with data augmentation, CutMix regularizer, and Tversky loss at the "Medieval 2020 Medico automatic polyp segmentation challenge", with increased 3% F1 accuracy compared to ResNet-34 architecture

Machine Learning Software Engineer — Dec 2017 - Dec 2019
Hamro Patro Inc. — Kathmandu, Nepal
- Deployed a News Classification project using **Multinomial Naive Bayes,** resulting in 94% accuracy
- Improved spam detection by 10% using **Recurrent Neural Network** over the old string filtering process
- Led a **recommendation system** project to send weekly updates to the users, increased user activities in the app by 30%
- Managed **backend services** for the Hamro Patro App and Website

PUBLICATIONS

- Ensemble U-Net model for efficient polyp segmentation - MediaEval'20
- Comparison of algorithms in Foreign Exchange Rate Prediction - IEEE
- Foreign Rate Exchange Prediction Using Neural Network and Sentiment Analysis - IEEE

TECHNICAL PROJECTS

- **House Prices - Advanced Regression Techniques:** Performed Exploratory Data Analysis and Predictive analysis
- **Tableau Dashboard using COVID-19 data**: Created dynamic bar graphs embedded in the tooltip, filtration by attributes
- **Credit Card Fraud Detection**: Compared different classifiers to classify fraudulent transactions
- **Music Streaming Prediction**: Used LabelEncoders, cleaning and preprocessing techniques, GridSearchCV, and different regressor algorithms for predicting this music streaming regression model along with Bagging, Repeated K Fold, and Principle
- **eBay and Amazon websites product comparison**: Implemented Django and Scrapy libraries for building User Interface to let them compare similar phones fetched from these websites