

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, Data Mining, Data Structures and Algorithm

TECHNICAL SKILLS

Programming Language/Framework: Python, PyTorch, Tensorflow, SQL, Java, numpy, scipy, Pandas, Cupy, Bash

Data Science: Computer Vision, Regression/Classification Models, ML Model Deployment/ Management, Data Mining, Image Processing, Data wrangling/modeling, Data Visualization

Tools: MLflow, AWS, NVIDIA Nsight System, Tableau, Github, BitBucket, Docker, gRPC, Rest API, Kubernetes

Knowledge: MLOps, Distributed Computing systems (multi-GPU, multi-node), Pipeline Parallelism, Slurm

WORK EXPERIENCE

Machine Learning Engineer Intern

May 2022 - Present

Georgia State University, Research Solutions

Atlanta, Georgia

- Implemented **NVIDIA DALI** for GPU level data loading and preprocessing, and **model parallelism** which decreased deep learning training time by 30%
- Perform **NVIDIA Nsight Systems** for performance analysis, profiling, benchmarking, 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 $\geq M1.0$, 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
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PUBLICATIONS

- [Extending the Capabilities of Operational Flare Forecasting](#) - EarthCube 2022
 - [Ensemble U-Net model for efficient polyp segmentation](#) - MediaEval 2020
 - [Comparison of algorithms in Foreign Exchange Rate Prediction](#) - IEEE 2018
 - [Foreign Rate Exchange Prediction Using Neural Network and Sentiment Analysis](#) - IEEE 2018
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TECHNICAL PROJECTS

- **Credit Card Fraud Detection:** Performed feature engineering, data visualization, and compared different classifiers
 - **House Price Prediction:** Performed missing value Imputation with KNN regressor/ classifier, encoding, regression algorithms
 - **Music Streaming Prediction:** Used LabelEncoders, cleaning/ preprocessing techniques, GridSearchCV, different regressor algorithms along with Bagging, Repeated K Fold, and PCA
 - **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
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