

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: Python (NumPy, pandas, scikit-learn, seaborn, imblearn, unittest, Matplotlib, MONAI), SQL, Java

Data Science: Computer Vision, Data Mining/ Analysis, Model Evaluation, Predictive Modeling, Regression Models, Classification Models, Image Processing, Data wrangling/modeling, Data Visualization

Tools: Tableau, Github, Bitbucket, Docker, gRPC, Rest API, Excel, Linux/Mac OS

WORK EXPERIENCE

Graduate Research Assistant

Aug 2021 - Dec 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 AlexNet produced more TSS than ResNet by 2%
- Decreased deep learning training time by 30%, using NVIDIA Dali library

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**
- Analyzed and compared the performance of different models like UNets, ResNets, Transposed Convolution, and DeepLab
- **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

Software Engineer / Machine Learning 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, which increased user activities in the Hamro Patro app by 30%
 - Managed **backend services** for the Hamro Patro App and Website
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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
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TECHNICAL PROJECTS

- **Building Energy Usage Prediction:** Working in predictive analysis Datathon dataset organized by Women in Data Science
 - **Tableau Dashboard using COVID-19 data:** Created dynamic bar graphs embedded in the tooltip, filtered by day, cases by country and symbols
 - **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
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