Jeevan Thapa

(+1)-585-290-2847 ✉ jt4812@g.rit.edu Rochester, NY thapa-jeevan thapajeevan.com.np

Research Interests

Continual Learning, Test-Time Adaptation, Continual Federated Learning

Application of Deep Learning Models to Real World Problems

Publications

Jeevan Thapa, Rui Li (2024). Bayesian Adaptation of Network Depth and Width for Continual Learning. In Forty-first International Conference on Machine Learning (**ICML 2024**).

Education

Ph.D. in Computing and Information Sciences **Aug 2022 - Present**

Rochester Institute of Technology (RIT) Rochester, U.S.A.

CGPA: 3.97

Relevant Coursework: Statistical Machine Learning, Deep Learning, Foundations of Data Science

Bachelor's Degree in Computer Engineering **Nov 2015 - Sep 2019**

Pulchowk Campus, Institute of Engineering, Tribhuvan University Lalitpur, Nepal

Relevant Coursework: Data Mining, Artificial Intelligence, Big Data Analytics, Probability and Statistics

Experience

Graduate Research Assistant **Aug 2022 - Present**

Rochester Institute of Technology (RIT) Rochester, U.S.A.

- Researching in the field of Continual Learning at the Lab of Use-inspired Computational Intelligence.

Machine Learning Engineer **Sep 2019 - Jun 2022**

Fusemachines Kathmandu, Nepal

- Worked on the design of machine learning pipeline and implementation of deep learning models for four industry projects.
- Developed course materials for Fusemachines microdegree, covering Computer Vision, transformer-based Natural Language Processing, and Time Series Analysis.

Instructor for "Mathematics for AI" **Jan 2021 - Jun 2021**

fuse|ai, Herald College Kathmandu, Nepal

- Instructed undergraduate course covering fundamental topics for machine learning, including Linear Algebra, Calculus, Probability and Statistics, and Information Theory.

AI Intern **Jan 2019 - Jun 2019**

Leapfrog Technology Kathmandu, Nepal

- Worked in license plate localization with standard convolutional neural networks and different loss functions.
- Trained to build a face recognition system with face detection, point-based face alignment, face embedding model, and nearest-neighbor classifier.

Projects

Human Trafficking Recognition from Sex Worker Ads and Inter-Ad Matching **Fusemachines**

- Served as Team Lead, overseeing the design of the machine learning pipeline and setting up the data annotation process.
- Implemented models for image-based and text-based trafficking recognition, contrastive loss-based image search, face-based person identification, and NER-based social handle extraction for inter-ad matching.

Analysis of Radio Panelists Data **Fusemachines**

- Worked on analysis of the impact of song quality, commercial length, and time of day on panelists, employing custom metrics and statistical tests to assess song quality.
- Fixed existing data pipeline to solve date inconsistency bugs and added feature engineering pipeline to augment existing dataset.

Waste Type Detection **Fusemachines**

- Developed an object detection system by integrating single shot detection and MobileNet architecture with focal loss to determine the type of waste and the intent of the person disposing of it.

Session-based Network Intrusion Detection System **Fusemachines**

- Performed a feasibility study on utilizing AutoEncoder-based semi-supervised learning for network anomaly detection, leveraging session data extracted from pcap files.

Nepali License Plate Recognition (Undergraduate Project) **Tribhuvan University**

- Developed a license plate recognition system, tailored for Nepali license plates, with three key stages: vehicle detection, license plate localization, and Nepali character recognition.
- Created a license plate localization dataset by annotating Nepali vehicle images, alongside building a Nepali character recognition dataset using Devanagari fonts.

Skills

Programming Languages	Python (advanced), C, C++
Deep Learning	PyTorch (advanced), TensorFlow, Keras
Machine Learning	scikit-Learn, NumPy, pandas, matplotlib, seaborn, MLflow
Miscellaneous	LaTeX, git, Linux
Languages	English, Nepali, Hindi, Magar

Awards & Honors

Scholarship/Assistantship for Ph.D.

- Received a merit-based scholarship at RIT to pursue a Ph.D. in Computing and Information Sciences.

Full Scholarship for Undergraduate Studies

- Awarded by Nepal Government for achieving the 11th rank in Tribhuvan University's entrance examination (4% acceptance rate).

Fusemachines AI Fellowship

- Shortlisted and enrolled in the MicroMasters program for machine learning by Fusemachines.

fuse|ai Scholarship

- Selected to join the fuse|ai course, gaining hands-on experience in machine learning and data science.