

Manish Munikar

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Education

University of Texas at Arlington, PhD in Computer Science	CGPA: 4.0	2020 – 2024 (expected)	Arlington, TX, USA
Tribhuvan University, Bachelors in Computer Engineering	Grade: 80%	2013 – 2017	Kathmandu, Nepal

Publications

- J. Lei, **M. Munikar**, H. Lu and J. Rao, “Accelerating Packet Processing in Container Overlay Networks via Packet-level Parallelism,” accepted to 37th IEEE International Parallel and Distributed Processing Conference (IPDPS '23)
- M. Munikar**, J. Lei, H. Lu and J. Rao, “PRISM: Streamlined Packet Processing for Containers with Flow Prioritization,” In Proceedings of the 42nd IEEE International Conference on Distributed Computing Systems (ICDCS '22), 2022. DOI: 10.1109/ICDCS54860.2022.00040
- J. Lei, **M. Munikar**, K. Suo, H. Lu and J. Rao, “Parallelizing Packet Processing in Container Overlay Networks,” In Proceedings of the Sixteenth European Conference on Computer Systems (EuroSys '21), pp. 261–276, 2021, DOI: 10.1145/3447786.3456241
- M. Munikar**, S. Shakya and A. Shrestha, “Fine-grained Sentiment Classification using BERT,” 2019 IEEE International Conference on Artificial Intelligence for Transforming Business and Society (AITB '19), Kathmandu, Nepal, 2019, DOI: 10.1109/AITB48515.2019.8947435
- P. Dhakal, **M. Munikar** and B. Dahal, “One-Shot Template Matching for Automatic Document Data Capture,” 2019 IEEE International Conference on Artificial Intelligence for Transforming Business and Society (AITB '19), Kathmandu, Nepal, 2019, DOI: 10.1109/AITB48515.2019.8947440

Work Experience

Cloud & Big Data Lab, University of Texas at Arlington Arlington, TX, USA
GRADUATE RESEARCH ASSISTANT Jan 2020 – Present

- Studied the behavior of container overlay network on Linux in great technical detail, and researched ideas to optimize its performance.

Amazon Sunnyvale, CA, USA
APPLIED SCIENCE INTERN May 2022 – Aug 2022

- Researched and evaluated ways to detect anomalies in human label datasets.

Amazon Sunnyvale, CA, USA
APPLIED SCIENCE INTERN May 2021 – Aug 2021

- Developed models to detect global inconsistencies in the Amazon catalog.

Docsumo Kathmandu, Nepal
DATA SCIENTIST Jul 2018 – Dec 2019

- Developed computer vision object-detection models (Faster R-CNN, YOLO, SSD) and text-based models to identify key points in documents.
- Developed a novel template-based engine to extract structured information from document images with over 90% accuracy.
- Gained experience in all stages of data science projects: data collection & annotation, model development & evaluation, and production-ready model deployment.
- Developed predictive analysis systems to detect anomalies in time-series data.


LIS Nepal Pvt. Ltd. Lalitpur, Nepal
SOFTWARE DEVELOPER Oct 2017 – Jun 2018

- Developed business intelligence (BI) reports for global retail enterprises using large-scale optimized SQL queries.
- Wrote data integration scripts using big data technologies (Hadoop, Hive, Sqoop, Flume).


Skills

Computer languages	Python, C/C++, SQL, Bash, Matlab, Scala, TeX , eBPF
Machine learning libraries	AutoGluon, MXNet, PyTorch, Keras, TensorFlow*, NumPy, OpenCV, Scikit-learn
Data science tools	Apache Spark, Pandas, SageMaker, Excel, Google BigQuery, Google Analytics
Cloud services	AWS, Google Cloud, DigitalOcean
Web & database	HTML, CSS, SQL, MongoDB*


Notable Projects

Docsumo  Jan 2019 – Dec 2019

- A product-as-a-service for extracting structured information from document images such as invoices, bank statements, W2-forms, etc. It uses a combination of object-detection models, rules engine, and template-matching engine to get an accuracy of over 90%.

Movie Review Mining and Recommendation System  Aug 2017

- A web application that analyzes movie reviews' sentiments using deep learning (RNTN) and builds a collaborative-filtering recommender system on top of it. Users provide movie reviews and get personalized movie recommendations in return. Built using Python and NumPy.

Photocrypt  Mar 2015

- A text-to-image steganography tool that lets you encrypt/decrypt text messages in bitmap image files so that you can send/receive messages without others' notice. It implements a modification of the Least Significant Bit (LSB) Substitution algorithm. Developed using C++, OpenCV, gtkmm.

Trainings & Certifications

Convolutional Neural Networks ✓, Coursera

Jul 2018

Neural Networks & Deep Learning ✓, Coursera

Apr 2018

Machine Learning ✓, Coursera

Mar 2018

Database Management Essentials ✓, Coursera

Jan 2018