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

- **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.
- 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 Artificial Intelligence for Transforming Business and Society (AITB)*, 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 Artificial Intelligence for Transforming Business and Society (AITB)*, 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 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, production-ready model deployment.

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, SQL, C/C++, Bash, Matlab, Scala, LaTeX, eBPF
Machine learning libraries	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*