Kishan K C — Curriculum Vitae

Rochester Institute of Technology
Golisano College of Computing and Information Sciences
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Research Interests: Data Science; Deep Learning; Computational Biology; Heterogeneous Data Integration.

EDUCATION

Ph.D., Golisano College of Computing and Information Sciences — **2016 – Present**
Rochester Institute of Technology (GPA: 4.0) — Rochester, New York
Thesis: Deep learning methods for the effective integration of heterogeneous biological data for genetic interaction network inference and gene function prediction.
Advisor: Dr. Rui Li and Dr. Anne Haake
Committee: Drs. Rui Li, Anne Haake, Feng Cui, Linwei Wang, Qi Yu

Bachelor of Engineering (B.E.), Computer Engineering — **2010 – 2014**
Central Campus Pulchowk, Tribhuwan University (GPA: 4.0) — Kathmandu, Nepal
Thesis: Agricultural Data Integration and Analysis – Analyzing heterogeneous factors that influence agriculture.

WORK EXPERIENCE

Human-Centric Multi-Modal Modelling Lab, RIT. — **Rochester, New York**
Research Assistant, Supervisor: Rui Li, Anne Haake — Aug 2016 – Present
- Developing deep neural network architecture to learn representations from heterogeneous data for genetic interaction network inference and gene function prediction.

Research and Development, Verisk Information Technologies — **Kathmandu, Nepal**
Data Engineer — May 2015 - Jun 2016
Project: Medical Intelligence
- Involved in requirement understanding and requirement-wise design.
- Implemented clinical logic with PL/SQL package, function, procedure, triggers, etc.

Data Warehouse ETL Team, Yomari Inc. Pvt. Ltd. — **Lalitpur, Nepal**
Software Trainee — Oct 2014 – Apr 2015
Project: Express Enterprise Data Warehouse (EDW)
- Developed ETL scripts to load data from multiple retail stores to the data warehouse.
- Developed an ETL process validation framework to ensure the successful transfer of data from source to destination.
- Created a wrapper function to automate the execution of test scripts and log output to database tables.

SCHOLARSHIPS, AND AWARDS

RIT Graduate Showcase Oral Presentation Award. (2019). Awarded for presentation titled "Learning Sparse and Structure Gaussian Embedding of Protein sequences using pairwise constraints".

RIT Ph.D. Merit Scholarship. (2016 – Present). Financial support for Ph.D. studies at the Rochester Institute of Technology since August 2016.

Team of the Quarter (2017). Awarded in recognition of exceptional performance for developing norm framework – processing and integration. Awarded by the Verisk Information Technologies.

The Verisk Way to Go Award (2016). Received this award as the Data Engineer on the Medical Intelligence project for outstanding contribution. Awarded by the Verisk Information Technologies.

Rookie of the Year (2016). Awarded in recognition of exceptional performance among 70 new employees. Awarded by the Verisk Information Technologies.

The College Fellowship. (2011 – 2015). For academic merit and performance in each semester during the undergraduate studies. Awarded by the Institute of Engineering, Central Campus Pulchowk.

Academic Excellence Scholarship. (2011-2015). For excellent academic performance in the exams of six semesters (II, III, V, VI, VII, VIII) of Bachelor's in Engineering part of Computer Engineering. Awarded by the Institute of Engineering, Central Campus Pulchowk.

PUBLICATIONS

PEER-REVIEWED CONFERENCE PAPERS AND POSTERS

[C.2] **Kishan K C**, Rui Li, Feng Cui, Qi Yu, Anne Haake. 2019. "GNE: A deep learning framework for gene network inference by aggregating biological information". The Asia Pacific Bioinformatics Conference. (APBC 2019).

[C.1] **Kishan K C,** Rui Li, Feng Cui, Anne Haake. 2018. "Learning topology-preserving embedding for gene interaction networks". 17th European Conference on Computational Biology. (ECCB 2018). (Poster).

PREPRINTS

[P.1] **Kishan K C**, Rui Li, Feng Cui, Anne Haake. 2019. "A Sparse and Structured Self-attentive neural network for Protein-Protein Interaction Prediction". In submission.

OTHER PRESENTATIONS

[Poster.3] **A deep framework for aggregating heterogeneous biological information for gene network inference**
Biological Data Science, Cold Spring Harbor Laboratory, 2018

[Poster.2] **Gene Network Embedding.**
New Deep Learning Techniques, IPAM, UCLA, 2018

[Poster.1] **Reconstruction of Gene Regulatory Networks with Ensemble SVM.**
AI@GCCIS: Golisano College Research & Innovation Showcase, RIT, 2017

[Talk.5] **Learning Sparse and Structure Gaussian Embedding of Protein sequences using pairwise constraints**
RIT Graduate Showcase, RIT, 2019. (**Best Oral Presentation Award**)

[Talk.4] **Learning representation from protein sequences**
Guest talk, CISC 865.01 Deep Learning, RIT, 2019

[Talk.3] **Pytorch Tutorials**
Guest talk, CISC 865.01 Deep Learning, RIT, 2019

[Talk.2] **Deep Learning on Graphs.**
Guest talk, Deep Learning Seminar, RIT, 2018

[Talk.1] **Introduction to Neural Networks.**
Guest talk, , CISC 863.01 Statistical Machine Learning, RIT, 2018

SKILLS

Data Science tools	IPython, NumPy, Pandas, SciPy, Matplotlib, Seaborn, NetworkX
Deep Learning	PyTorch
Machine Learning	Scikit-learn (Python), Caret (R)
Programming Languages	Python, Java, R
Databases	SQL, PL/SQL

CERTIFICATIONS

Data Science Certification, Coursera	2016
Statistical Learning, Stanford Online	2015

OPEN SOURCE PROJECTS

Gene Network Embedding (GNE)
Designed and developed a deep learning method that integrates network structure with gene expression data to learn interpretable embeddings and demonstrated the state-of-the-art performance in gene interaction inference.

GNE (TensorFlow)

Attentive Multimodal Tied Autoencoder (AMTAE)
Designed and implemented a new interpretable network fusion method with 73% fewer parameters than the state-of-the-art method (deepNF) and demonstrated comparable performance.

AMTAE (PyTorch)

Agricultural Data Integration and Analysis
Integrated multiple factors to understand their effect of crop production and build a recommendation system to suggest appropriate crop cultivation.