Parmis Naddaf

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EDUCATION

MSc. in Computing Science (Thesis) Simon Fraser University | Burnaby, BC **May 2021 - Apr 2023**

- **Thesis:** Answering Probabilistic Graph Queries from a Single Model (Link)
- **Relevant Topics:** Statistical Machine Learning, Machine Learning, Deep Learning, Machine Learning in Life

BSc. in Computing Science Simon Fraser University | Burnaby, BC **Sept 2015 - Apr 2021**

- **Relevant Topics:** Data Science, Database, Probability and Statistics, Artificial Intelligence, Algorithms

SKILLS

- **Technical Skills:** Data Science, Database, Machine Learning, Deep Learning, NLP
- **Languages:** Python, SQL, Matlab, JavaScript, HTML/CSS
- **Frameworks:** PyTorch, Keras, TensorFlow, Numpy, Pandas, scikit-learn
- **Tools:** Git, Bash, AWS, Docker, Microsoft Office, JIRA
- **Soft Skills:** Communication and Collaboration, Teamwork, Problem Solving

WORK EXPERIENCE

Machine Learning Researcher Huawei-SFU Joint Lab | Burnaby, BC **May 2023 - Current**

- **Project: Unifying Logic and probability: Knowledge Controlled Graph Generation on Traffic Data**
  - Conducted research on prediction of future sequences in a driving scene.
  - Built network training models, intelligent analysis and key feature extraction systems.
  - Proposed a generative model, **achieving a 3% improvement** in predicting the next road scene frame.

Graduate Research Assistant Simon Fraser University | Burnaby, BC **Sept 2020 - May 2023**

- **Project 1: Joint Link Prediction Via Inference from a Model**
  - Constructed a unified framework with **Variational Graph Autoencoders**, **enhancing inductive link prediction metrics by up to 4%**.
  - Organized, cleaned, merged, and standardized data collected from various databases.
  - Developed the model using a variety of **Python** tools including PyTorch, Numpy, and Tensors.
  - Designed and conducted A/B tests, analyzing statistics to measure solution impact.
- **Project 2: Micro and Macro Level Graph Modeling for Graph Variational Autoencoders**
  - Established a pioneering multi-level framework for **generative graph modeling**, boosting graph quality scores by **up to 2%.**
  - Shared research findings at conferences, promoting knowledge exchange and engagement.

- **Project 3: Deep Variational Inference for Inductive Link Prediction**
  - Introduced a theoretical approach using conditional variational autoencoders for accurate link prediction in **complex graphs**.
  - Implemented end-to-end data science pipelines for processing and analyzing massive datasets.
- **Project 4: Deep Learning of Latent Edge Types from Relational Data**
  - Collaborated on a novel Variational Graph Auto-Encoder Framework, **improving existing link prediction models (up to 6% AUC).**
  - Engineered graph-specific **data preprocessing**, optimizing **feature extraction** and anomaly handling.
  - Implemented and evaluated ML algorithms, establishing performance benchmarks for **classification**.
  - Utilized advanced **representation learning** methods to accurately classify nodes in knowledge graphs.

Data/BI Developer Co-Op 3AG Systems Inc. | Burnaby, BC **Jan 2020 - May 2020**

- Designed and developed database architecture for information systems projects
- Created schemas and configured applications at the database level to support optimal performance.

Undergraduate Research Assistant Simon Fraser University | Burnaby, BC **May 2019 - Sept 2019**

- **Project: Multimodal Neural Graph Memory Networks for Visual Question Answering**
  - Conducted comprehensive statistical analysis and created visually compelling representations of data.
  - Employed **CNNs** for precise object detection based on contextual questions.
  - Improved image captions by **up to 3% in accuracy** using **NLP** techniques.

Software Test Engineer Co-Op Netgear | Richmond, BC **Jan 2018 - Sept 2018**

- Developed and implemented automation unit test scripts using Python, resulting in a **15% improvement in test coverage** and enhancement in testing accuracy.
- Documented defects using **JIRA**, facilitating issue resolution with thorough testing support.

PUBLICATION

- Joint Link Prediction Via Inference from a Model | CIKM 2023
- Micro and Macro Level Graph Modeling for Graph Variational Autoencoders | NeurIPS 2022
- Deep Variational Inference for Inductive Link Prediction | AAAI 2022
- Deep Learning of Latent Edge Types from Relational Data **(Best Student Paper Award)** | Canadian AI 2022
- Multimodal Neural Graph Memory Networks for Visual Question Answering | NeurIPS 2019