Mohammad Mahdi Abdollah Pour

LinkedIn: mabdollahpour
GitHub: mahdiabdollahpour

Email: m.abdollahpour@mail.utoronto.ca
Mobile:+1 416 893 7863
Google Scholar

HIGHLIGHT

- +5 years of experience in Deep Learning with applications in Natural Language Processing, Information Retrieval, and Computer Vision.

- Proficient in constructing end-to-end Deep Learning pipelines with Pytorch, and TensorFlow. Experienced with training deep learning models distributed over multiple accelerators (GPU, TPU).

- Maintained excellent communication with the team, demonstrated self-motivation and creative thinking in problem-solving.

EDUCATION

University of Toronto   Toronto, Canada
MASc, Information Eng.; GPA: 4/4   *Jan 2022 - Dec 2023*
Thesis Title: *Controllable Generation with Large Language Models for Text Detoxification*

Amirkabir University of Technology   Tehran, Iran
BSc., Computer Eng.; GPA: 4/4, **Ranked 1st**   *Sep 2016 - Aug 2020*
Thesis Title: *Cross-Lingual Transfer Learning for Sequence Tagging Tasks*

EXPERIENCE

Research Assistant - University of Toronto / LG Electronics AI   Jan 2022 - Dec 2023
Supervisor: Prof. Scott Sanner   *Toronto*

Research on Neural Information Retrieval and Controllable Text Generation in collaboration with LG Electronics AI:

(a) Leveraged document structure in contrastive learning to improve retrieval performance of Vector DB aggregation by ∼0.2 MAP and R-Prec score, ECIR2023

(b) Contrastively penalizing toxic text style while effectively normalizing other style-irrelevant aspects, EMNLP2023

(c) Using mixed Diffusion Model to improve fluency in Text Detoxification, ACL2023

(d) Commonsense Reasoning for food recipe Question Answering using LLMs, SIGIR2023

NLP Practitioner - Rumor identification   Oct 2020 - May 2021
Supervisor: Dr. Sardar Hamidian at George Washington University   *Remote*

Using Active Learning strategies for low resource Rumour Detection on Tweets showed performance plateaus with 100-200 well-chosen data samples EMNLP2021

Research Intern - National University of Singapore   Jul 2019 - Sep 2019
Supervisor: Prof. Reza Shokri   *Singapore*

Developed a browser plugin to obfuscate face images using adversarial attack to enhance the privacy of users on social media that achieved a 35% success rate. Link for Report, Sample outputs, Code

Research Assistant - Amirkabir University of Technology   Feb 2018 - Sep 2020
Supervisor: Prof. Saeedeh Momtazi   *Tehran*

Developed Persian NLP toolkit for AUT NLP lab.

Research and Development Intern in NLP - Diaalog   Jun 2018 - Dec 2018
                                                                                                                                        Tehran
Developing chatbot system using deep learning for customer support calls, Github repo, Github repo

PUBLICATIONS

[1] **COUNT: COntrastive UNlikelihood Text Style Transfer for Text Detoxification**: EMNLP2023, Pdf, Code

[2] **Self-Supervised Contrastive BERT Fine-tuning for Fusion-based Reviewed-Item Retrieval**: ECIR2023, Pdf, Code, Slides

[3] **DiffuDetox: A Mixed Diffusion Model for Text Detoxification**: ACL2023, Pdf

[4] **Recipe-MPR: A Test Collection for Evaluating Multiaspect Preference-based Natural Language Retrieval**: SIGIR2023, Pdf, Code

[5] **Active Learning for Rumor Identification on Social Media**: EMNLP2021, Pdf

[6] **Comparative study of text representation and learning for Persian NER**: ETRI Journal, Pdf

[7] **A New Transformer-Based Hybrid Model for Forecasting Crude Oil Returns**: AUT Journal of Modeling and Simulation, Pdf

Honors and Awards

- Conference Travel Grant - University of Toronto - C$2,250   2023
- University of Toronto MIE Fellowship - C$40,700   2022 - 2023
- University of Toronto Research Assistantship - C$56,000   2022 - 2023
- The 1st place among BSc. students in Computer Engineering of AUT   2017, 2018, 2019, 2020
- Awarded Direct Admission for Master studies, Amirkabir and Sharif University (without entrance exam)   2020

Skills

- **Programming Languages**:   Python, Java, C++, Javascript
- **Deep Learning Tools**:   HuggingFace Transformers, PyTorch, TensorFlow, JAX (Familiar)
- **Data Science and ML Tools**:   NumPy, Pandas, Matplotlib, SciPy, Sk-learn, XGBoost
- **Parallel Computing**:   CUDA, OpenMP
- **Databases**:   MySQL, PostgreSQL
- **Quantitative Research**:   NLP, Deep Learning, Information Retrieval
- **Math**:   Statistical Machine Learning, Linear algebra
- **Communication**:   English, Persian (native speaker)

Open-Source

- **Beam Search with Rollouts**: Extending Huggingface's Transformers library .generate() function to support beam search with rollouts. Github Repo

- **Security and Privacy in ML**: Implemented some famous methods on Security and Privacy in ML Github Repo