

MEHDI REZAAE

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INTERESTS

Machine Learning, Natural Language Processing, Variational Inference, Bayesian Networks

EDUCATION

Doctor of Philosophy in Electrical Engineering 2017-present

University of Maryland Baltimore County.

GPA: 3.75/4

Master of Science in Electrical Engineering 2014-2017

Sharif University of Technology (Tehran, Iran)

Thesis: Multi-Camera Action Recognition with Manifold Learning.

Bachelor of Science in Electrical Engineering 2010-2014

Isfahan University of Technology (Isfahan, Iran)

PUBLICATIONS

Discriminative and Generative Transformers For Situation Entity Classification. Arxiv

Mehdi Rezaee, Kasra Darvish, Gaoussou Youssouf Kebe and Francis Ferraro.

First Author

We compare various generative and discriminative models for the situation entity classification and cover both low-label and plentiful annotated training regimes. We show that Transformers with latent variables can outperform the SOTA.

Event Representation with Sequential, Semi-Supervised Discrete Variables. NAACL 2021

Mehdi Rezaee and Francis Ferraro.

First Author

The semi-supervision term is usually used in deterministic models but we use it for discrete latent variables with soft information injection without affecting the gradient flow. Our model not only outperforms multiple baselines and the SOTA in narrative script induction, but also converges more quickly.

A Discrete Variational Recurrent Topic Model without the Reparametrization Trick. NeurIPS 2020

Mehdi Rezaee and Francis Ferraro.

First Author

We provide both experimental and analytical discussion about word-level topic modeling in conjunction with RNNs without marginalizing out the topics. We show improved perplexity and document understanding across multiple corpora.

A Survey on Compressive Sensing: Classical Results and Recent Advancements. JMM 2020

Seyedahmad Mousavi, Mehdi Rezaee and Ramin Ayanzadeh.

Second Author

We overview classical tools and algorithms in compressive sensing and compare their performance in recovering text representation from their embeddings.

SKILLS AND INTERESTS

Programming Languages Python, Matlab, C++

Tools, Libraries PyTorch, Tensorflow

Operation Systems Mac, Ubuntu

TALKS & PANELS

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| Annual Mid-Atlantic Student Colloquium on Speech, Language and Learning | March 2020 |
| - University of Maryland, College Park | |

COMPUTER VISION (OLD) PROJECTS

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| Moving Object Tracking with Extended Kalman Filtering | Spring 2017 |
| - Used Matlab to predict the 2D position of an object moving on a nonlinear path. | |
| - Under supervision of Prof. Seung-Jun Kim, UMBC | |
| 3D Human Activity Reconstruction With Marker. | Spring 2015 |
| - Used C++ , OpenCV and OpenGL to map human actions onto a 3D avatar. | |
| - Under supervision of Dr. K. Aghajan, Sharif University of Technology | |
| Head Pose Estimation From A Single Camera | Spring 2015 |
| - Used C++ and OpenCV to estimate the 3D head pose which lets you try 2D eyeglasses. | |
| - Under supervision of Dr. K. Aghajan, Sharif University of Technology | |
| Simulation of Intensity of Spontaneous Facial Action by Linear Regression | Spring 2015 |
| - Used Matlab to classify facial actions by using linear regression. | |
| - Under supervision of Dr. Mohammadzade, Sharif University of Technology | |
| Simulation of Kernel Discriminant Learning for Face Recognition. | Fall 2015 |
| - Used Matlab to recognize face by using high dimensional kernels. | |
| - Under supervision of Dr. Mohammadzade, Sharif University of Technology | |

PUBLIC SERVICE

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| Journal Reviewing | |
| Elsevier Signal Processing | 2020 |
| Conference Reviewing | |
| Automated Knowledge Base Construction (AKBC) | 2021 |
| International Joint Conferences on Artificial Intelligence (IJCAI-PRICAI) | 2019 |
| Empirical Methods in Natural Language Processing (EMNLP) | 2019 |

HONOURS AND AWARDS

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| Ranked 24th of the country, in the M.Sc. Entrance Exam | 2014 |
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TEACHING EXPERIENCE

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| CMPE 306 (Introductory Circuit Theory) | Spring and Fall 2017 |
| - Taught by Dr. Yan and Dr. Carter (UMBC) | |
| Signals and Systems | Spring 2016 |
| - Taught by Dr. Babaie-Zadeh (Sharif University of Technology) | |
| Computer Vision in Multi-Camera Networks | Spring 2015 |

- Taught by Dr. K. Aghajan (Sharif University of Technology)

Adaptive Filters

Fall 2016

- Taught by Dr. Babaie-Zadeh (Sharif University of Technology)

RELEVANT GRADUATE COURSEWORK

UMBC:

- CMSC 673 - Introduction To Natural Language Processing
- ENEE 620 - Probability and Random Processes
- ENEE 605 - Applied Linear Algebra
- ENEE 621 - Detection and Estimation Theory
- ENEE 718 - Topics in Signal Processing (Machine Learning)

Sharif University of Technology:

- Statistical Learning
- Computer Vision
- Digital Image Processing
- Adaptive Filters