ROHOLA ZANDIE

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EDUCATION

Massachusetts Institute of Technology *2023-Present*
Post-Doctoral in Biomedical engineering *Cambridge, MA*
Advisor: Elazer R. Edelman

University of Denver *2017-2023*
Ph.D. Candidate in Electrical and Computer Engineering *Denver, CO*
Major in Natural Language Processing and Machine Learning
Overall GPA: 3.92/4.0

Sharif University of Technology *2012-2015*
M.S. in Artificial Intelligence *Tehran , Iran*
Natural Language Processing
Overall GPA: 16.96/20

Shahid Beheshti University *2007-2012*
B.S. in Computer Software Engineering *Tehran , Iran*
Overall GPA: 15.61/20

RESEARCH EXPERIENCE

Massachusetts Institute of Technology Dec 2024 - Current
Post-Doctoral Research in Biomedical Engineering *Cambridge, MA*

- Large Language models for scRNA data, Multimodal Learning for Mapping the Genotype-Phenotype Dynamics
- Research on interpretability methods on Genotype-Phenotype relationships
- Research on Diffusion based models for temporal analysis of developmental biology processes

University of Denver Jun 2017 - Jun 2023
Research Assistant in Natural Language Processing and AI *Denver, CO*

- Topical language generation using Latent Dirichlet Allocation and GPT transformers. Controlling different aspects of language generation and simulating the style of given documents
- Empathetic dialog system based on the state-of-the-art deep learning transformer language models. Design a novel approach to use multi-task learning for incorporating emotion and other contextual knowledge to improve language generation and response quality.
- Common sense abduction language generation and inference using large language models and temporal reasoning, context filtering, and semantic entailment.
- Augmented goal-oriented conversational agent for interacting with elderly people. Designing an improved AIML-based dialog system that is used within a humanoid robot and integrate non-text clues like vision to be able to interact with people more naturally.
- Developed SOTA text to speech and vocoder models for newly created speech corpus

Sharif University of Technology Sep 2012 - Aug 2015
Research Assistant in advanced signal processing *Tehran, Iran*

- Creating a temporal corpus for Persian language and developing a system for recognizing events and temporal relations between them.

WORK EXPERIENCE

Speechify Inc. Jun 2022- Nov 2023
Machine learning and Speech Engineer (Internship) *Denver*

· Developing SOTA speech synthesis based on deep flow-based models

DreamFace Technologies Jun 2021 - Sep 2021
Machine learning and NLP Specialist (Internship) *Denver*

· Developing Hybrid Chatbot for Ryan using Blender model and AIML technologies
· Developing an emapthic aware Chatbot for Ryan using SOTA models in NLP

Batis Jul 2012 - May 2016
Software Developer *Tehran*

· Developed a database system with user interface in .NET framework in a network system.

TECHNICAL STRENGTHS

Programming Skills	Python, R, MATLAB, Java, C#, C++, PHP.
Libraries	Pytorch, TensorFlow, Keras, Gensim, PyMC3, Spacy, Celery.
Databases	MongoDB, Elasticsearch, Mysql, SQL Server,

TEACHING EXPERIENCE

University of Denver, Denver, CO

T.A. Applied MATLAB programming Spring 2018

University of Denver, Denver, CO

T.A. Advanced Digital Design Fall 2019

SELECTED PUBLICATIONS

1. **Rohola Zandie**, Diwanshu Shekar, and Mohammad H. Mahoor, "CoGen: Abductive Commonsense Language Generation" Published in ACL 2023.
2. **Rohola Zandie**, Mohammad Mahoor, "Topical Language Generation using Transformers", published in the Journal of Natural Language Engineering 2020.
3. **Rohola Zandie**, Mohammad Mahoor, "A Multi-head Transformer Architecture for Developing Empathetic Dialog Systems", Presented in the conference on Applied Natural Language Processing 2020.
4. **Rohola Zandie**, Mohammad H Mahoor, Julia Madsen, Eshrat S Emamian, "RyanSpeech: A Corpus for Conversational Text-to-Speech Synthesis" accepted in the conference of Interspeech 2021.
5. Farhan Khodaee, **Rohola Zandie**, Elazer R Edelman, "Multimodal Learning for Mapping the Genotype-Phenotype Dynamics", Nature, 2024
6. Francesca Dino, **Rohola Zandie**, Hojjat Abdollahi, Sarah Schoeder and Mohammad H. Mahoor, "Delivering Cognitive Behavioral Therapy Using A Conversational SocialRobot" Presented in IROS Conference, 2019.
7. Hojjat Abdollahi, Mohammad H Mahoor, **Rohola Zandie**, Jarid Sewierski, Sara Qualls, "Artificial emotional intelligence in socially assistive robots for older adults: A pilot study", Published in IEEE Transactions on Affective Computing, 2022.

8. **R. Zandie**, M. Ershad, G. Ghassem-Sani, "Event and Event Relation Extraction in Persian Texts", Accepted in 21th National Iranian Conference on Computer science" 2016.

PROFESSIONAL SERVICES

Served as reviewer for Association for the Advancement of Artificial Intelligence 2020
Served as reviewer for IEEE International Conference on Robotics and Automation 2019
Served as reviewer for International Conference on Machine Learning Techniques 2021

HONORS AND AWARDS

Winner of the MIT 100k award first phase 2024
University of Denver Dissertation Fellowship Award 2022
Bahramisharif Scholarship for Engineering Graduate Studies, University of Denver 2019
Ranked 10th in the Iranian nation-wide MS entrance in Artificial Intelligence.....2015
Ranked in the top 1% of the Bachelor's degree participants in the national entrance exam.....2007