Pooneh Mousavi

Contact Information

Github: `poonehmousavi`   *E-mail:*   `mousavi.pooneh@gmail.com`

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EDUCATION

Ph.D. Candidate in Computer Science   2022 - present
Concordia University and Mila, Montreal, Quebec, Canada
GPA: **4** out of **4**
Mentor: Mirco Ravanelli
Research Interests: Multimodal Foundation Models, Audio Representation Learning, Speech Processing

M.S. in Computer Science   2018 - 2021
University of Texas at Dallas, Dallas, TX
GPA: **3.9** out of **4**

BSc. in Computer Engineering   2009 - 2013
K. N. Toosi University of Technology (KNTU), Tehran, Iran

PUBLICATION

Discrete Audio Tokens: More Than a Survey! **Pooneh Mousavi**†, *Gallil Maimon*, Adel Moumen*, Darius Petermann*, Jiatong Shi*, Haibin Wu*, Haici Yang*, Anastasia Kuznetsova*, Artem Ploujnikov, Ricard Marxer, Bhuvana Ramabhadran, Benjamin Elizalde, Loren Lugosch, Jinyu Li, Cem Subakan, Phil Woodland, Minje Kim, Hung-yi Lee, Shinji Watanabe, Yossi Adi, Mirco Ravanelli, pdf (preprint).*

LiSTEN: Learning Soft Token Embeddings for Neural Audio LLMs. **Pooneh Mousavi***, *Shubham Gupta*, Cem Subakan, Mirco Ravanelli, pdf (Proc. of Interspeech, 2025).*

ALAS: Measuring Latent Speech-Text Alignment For Spoken Language Understanding In Multimodal LLMs. **Pooneh Mousavi**, *, Yingzhi Wang, Mirco Ravanelli, Cem Subakan, pdf (ICML Workshop on Machine Learning for Audio, 2025).*

What Are They Doing? Joint Audio-Speech Co-Reasoning. Y Wang, **P Mousavi**, *A Ploujnikov, M Ravanelli pdf (ICASSP 2025).*

How Should We Extract Discrete Audio Tokens from Self-Supervised Models? **Pooneh Mousavi**, *Jarod Duret and , Salah Zaiem, Luca Della Libera, Artem Ploujnikov, Cem Subakan, Mirco Ravanelli, pdf (Proc. of Interspeech, 2024, oral session).*

DASB - Discrete Audio and Speech Benchmark. **Pooneh Mousavi**, *Luca Della Libera, Jarod Duret, Artem Ploujnikov, Cem Subakan, Mirco Ravanelli, pdf (preprint)*

CL-MASR: A Continual Learning Benchmark for Multilingual ASR. Luca Della Libera*, **Pooneh Mousavi***, *Salah Zaiem, Cem Subakan, Mirco Ravanelli, (TASLP 2024), pdf.*

Open-Source Conversational AI with SpeechBrain 1.0.(JMLR 2024), pdf.

WOODS: Benchmarks for Out-of-Distribution Generalization in Time Series. Jean-Christophe Gagnon-Audet, Kartik Ahuja, Mohammad Javad Darvishi Bayazi, **Pooneh**

Mousavi, Guillaume Dumas, Irina Rish (TMLR 2023), pdf.

Detecting Hashtag Hijacking for Hashtag Activism. **Pooneh Mousavi**, Jessica Ouyang (NLP for Positive Impact (EMNLP 2021)), pdf.

"Please Donate for the Affected": Supporting Emergency Managers in Finding Volunteers and Donations in Twitter Across Disasters. **Pooneh Mousavi**, Cody Buntain (ISCRAM 2022), pdf.

RESEARCH EXPERIENCE

Research Assistant   Sep 2022 - Now
MILA - Quebec AI Institute, Concordia University
Mentor: Dr. Mirco Ravanelli

- Contributed to **SpeechBrain** project, a popular open-source Conversational AI toolkit, for ASR CommonVoice recipes, dialogue systems, interface with LLMs including LLama2 and GPT, discrete audio representations and multilingual ASR continual learning benchmark.
- Working on discrete audio representation, and multimodal foundation models.

Machine Learning Scientist in Residence   May 2023 - Aug 2023
Draft & Goal, MILA - IVADO
Mentor: Dr. Eva Portlance

- Efficient fine-tuning LLM like Falcon and Llama2 for specific applications using QLoRA

Research Scientist   10/2021 - 08/2022
The Ubiquitous Knowledge Processing Lab, Technische Universität Darmstadt, Germany
Mentor: Prof. Dr. Iryna Gurevych

- Applying ML and NLP for **"AI In Digital Mental Health"** project.
- Severely **missing** multimodal data for effective analytics

Graduate Research Assistant   2018 - 2021
University of Texas at Dallas, Dallas, TX
Mentor : Dr. Jessica Ouyang

- Working with Social media data and Natural Language Processing techniques for detecting hashtag hijacking on Twitter.

PROFESSIONAL EXPERIENCE

Data Science - Technology Solutions Intern   01/2021 - 05/2021
Pioneer Natural Resources, Dallas, TX,US

- Designed an algorithmic framework for real time **anomaly detection** alert of the Electric Submersible Pump on **time-series data** using **LSTM**, **Transformers** and **AR models**

Full Stack Developer, Technical Lead   2014 - 2018
Dotis Arian Gheshm (Dotin), Tehran, Iran

- Designed and implemented **Payment Switch Service Provider** to provide user interface and API for clients and external applications with the TPS of 100 with 10M Clients using **MicroServices Architecture** and **Rich Internet Application (RIA)**

WORKSHOP PARTICIPATION

Qiskit Quantum Machine Learning Summer School   2021
Qiskit Global Summer School 2021, Online

The Machine Learning Summer School   *2020*
Max Planck Institute for Intelligent Systems, Tübingen, Germany

The Summer Institutes in Computational Social Science   *2020*
Rutgers University, New Brunswick, NJ

TEACHING EXPERIENCE

- *Teaching Assistant - Conversational AI, Concordia University*   *2023-2024*

- *Teaching Assistant, University of Texas at Dallas (UTD)*   *2018-2020*

LANGUAGES, TECHNOLOGIES

- *Programming Languages: Python • Typescript • OCaml • C++ • Scala • Javascript • Java • SQL*

- *Technologies: PyTorch • Keras/TensorFlow • Git • Docker • Bazel • Docker • Kubernetes • Jenkins • Maven • Ansible*