Sina Mahdipour Saravani

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FIELDS OF INTEREST

- Neural Language Representation, Interpretability in NLP, Commonsense Reasoning, Language Grounding, Figurative Language Identification
- Natural Language Processing, Deep Learning and Machine Learning for NLP

EDUCATION

Colorado State University, Fort Collins, United States
- M.S., Computer Science, In Progress — 2020 - 2022
  - Cumulative Grade Average: **4/4**

Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran
- B.Sc., Computer Systems Architecture — 2014 - 2019
  - Cumulative Grade Average: **16.61/20**

PUBLICATIONS AND MANUSCRIPTS

- Sina Mahdipour Saravani, Ritwik Banerjee, and Indrakshi Ray. 2021. An Investigation into the Contribution of Locally Aggregated Descriptors to Figurative Language Identification. In *Proceedings of the EMNLP Workshop on Insights from Negative Results in NLP*.
- Sina Mahdipour Saravani, Indrajit Ray, and Indrakshi Ray. 2021. Automated Identification of Social Media Bots using Deepfake Text Detection. In *Proceedings of the International Conference on Information Systems Security (ICISS) (to appear)*.

RESEARCH AND WORK EXPERIENCES

- **Research Assistant, Colorado State University, USA** — 2020 - Present
  - Supervisors: Dr. Indrakshi Ray and Dr. Ritwik Banerjee
  - Working on various NLP projects including the application of VLADs to NLP (for sarcasm detection in Twitter), claim/counterclaim detection in YouTube with regards to COVID-19 data, access control policy extraction from natural language documents, and machine translation for low-resource languages.
- **Graduate Assistant, University of Nevada, Las Vegas, USA** — 2019 - 2020
  - Supervisor: Dr. Kazem Taghva
  - Worked on Named Entity Recognition for Persian using a BiLSTM-CRF architecture.
- **NLP Developer and Research Assistant, CommentMiner, Iran** — 2017 - 2018
  - Supervisor: Mr. Ahmad Asadi
  - Worked in CommentMiner start-up on developing a set of text processing micro services and a question answering chat bot for Persian language. Services included short-text topic classification, profanity detection, NER, and sentiment analysis.

TEACHING AND MENTORING EXPERIENCES

- **Mentor**, Colorado State University — 2020 - 2021
  - Mentored 2 graduate, 4 undergraduate and 2 high school students for research in NLP.
- **Temporary Teaching Faculty**, University of Nevada, Las Vegas — Summer 2020
  - Computer Science II (CS202) course
- **Teaching Assistant**, University of Nevada, Las Vegas — Spring 2020
  - Data Mining (CS458/658) course, Instructor: Dr. Kazem Taghva
- **Teaching Assistant**, Amirkabir University of Technology (Tehran Polytechnic) — Fall 2018
  - Embedded & Real-Time Systems course, Instructor: Dr. Hamed Farbeh

PROFESSIONAL SERVICES

- **TheWebConf**, Reviewer — 2021 & 2022
- **ICDCS**, Reviewer — 2021

- ◇ **ACISP**, Reviewer 2021
- ◇ **IEEE TPS**, Reviewer 2020 & 2021
- ◇ **IEEE S&P**, Reviewer 2020
- ◇ **Scientific Association and Olympiad Affairs Office of Computer Engineering Department at Amirkabir University of Technology**, Industry Relations Officer 2015

Relevant Projects

- ◇ **Investigation into the Application of VLAD to NLP for Figurative Language Identification**, Colorado State University
  Investigated the application and effectiveness of vector of locally aggregated descriptors on top of Transformer-based language representation layers. Studied irony/sarcasm detection in Twitter as a use case.
- ◇ **Deepfake Text Detection for Social Media Bot Identification**, Colorado State University
  Implemented Transformer-based models to detect bot-generated text on a deepfake dataset resulting in performance improvements by using domain-specific pre-trained models.
- ◇ **Claim/Counterclaim Pair detection in YouTube Comments**, Colorado State University
  Currently designing a framework to extract claims and counterclaims from YouTube video comments by claim detection, stance detection, and NLI.
- ◇ **Machine Translation for Similar Low-Resource Language Pairs with Loan Words**, Colorado State University
  Currently studying the potential benefit of using load words in similar languages to incorporate that knowledge into a machine translation framework.
- ◇ **Extracting Access Control Policies from Natural Language Documents**, Colorado State University
  Currently studying a transformer-based semantic role labeling approach for extracting access control policies and representing them in NGAC graphs.
- ◇ **Implementation of Convolutional and Pooling Layers of a CNN on FPGA**, Amirkabir University of Technology
  Implemented the convolutional and the max pooling functions of CNNs using Xilinx Vivado High-Level Synthesis and ran this project on a ZYBO SoC board. This design achieved up to 30 times faster throughput relative to the software code on a CPU.
- ◇ **Activity Recognition with Wearable Sensor Dataset in Spark Platform**, University of Nevada, Las Vegas
  Implemented scalable activity classification solutions (MLP Network, Logistic Regression, and Decision Tree) using Spark libraries for motion data of the elderly in a room.

Honors and Awards

- ◇ **Fully-funded Research Assistantship**, Colorado State University 2020
- ◇ **UNLV Access Grant**, University of Nevada, Las Vegas 2020
- ◇ **Fully-funded Graduate Assistantship**, University of Nevada, Las Vegas 2019
- ◇ **Top 50 start-ups** in GITEX start-ups competition, UAE (CommentMiner) 2017
- ◇ **3rd place** in ElecomStars start-ups competition, Iran (CommentMiner) 2017
- ◇ **1st place grant** in Sharif VC Cup start-ups competition, Iran (CommentMiner) 2017
- ◇ Ranked top **0.2**% in Nationwide University Entrance Exam in Math. & Physics, Iran 2014

Relevant Skills

- ◇ Programming: Python, Java, C/C++, C#
- ◇ Tools and Frameworks: PyTorch, Keras, TensorFlow, Hugging Face Transformers, MALLET, Stanford NLP, polyglot, NLTK, OpenMP, CUDA, Docker
- ◇ Others: LaTeX, Bash, Vivado and Hardware Design Softwares, Basic Web Programming

References

Available upon request.