Sina Mahdipour Saravani

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FIELDS OF INTEREST
- ◇ Neural Language Representation, Interpretability in NLP, Figurative Language Identification, Commonsense Reasoning, Applications in Social Media Analysis
- ◇ 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. Accepted in *Workshop on Insights from Negative Results in NLP co-located with Conference on Empirical Methods in Natural Language Processing (EMNLP 2021 Workshop)*.
- ◇ Sina Mahdipour Saravani, Indrajit Ray, and Indrakshi Ray. 2021. Automated Identification of Social Media Bots using Deepfake Text Detection. Under review in *International Conference on Information Systems Security (ICISS 2021)*.

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 EXPERIENCES
- ◇ **Temporary Teaching Faculty**, University of Nevada, Las Vegas — Summer 2020
  - Computer Science II (CS202)
- ◇ **Teaching Assistant**, University of Nevada, Las Vegas — Spring 2020
  - Data Mining (CS458/658)
    Instructor: Dr. Kazem Taghva
- ◇ **Teaching Assistant**, Amirkabir University of Technology (Tehran Polytechnic) — Fall 2018
  - Embedded & Real-Time Systems
    Instructor: Dr. Hamed Farbeh

PROFESSIONAL SERVICES
- ◇ **ICDCS 2021**, Reviewer — 2021
- ◇ **TheWebConf 2021**, Reviewer — 2021

◇ **ACISP 2021**, Reviewer — 2021
◇ **IEEE S&P 2020**, Reviewer — 2020
◇ **IEEE TPS 2020**, 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 classification solutions (Multilayer Perceptron Network, Logistic Regression, and Decision Tree) using Spark libraries for motion data of elderly people in a room, (Python, Spark).

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.