

Hamid MOHAMMADI

PERSONAL INFORMATION

BIRTH: Iran | 23 July 1996
RESIDENCE: Tehran, Iran
EMAILS: hamid4@ualberta.ca | hamid.mohammadi@aut.ac.ir
WEBSITE: sandstorm12.github.io
GITHUB: [sandstorm12](https://github.com/sandstorm12)

EDUCATION

APR 2022 - PRESENT UNIVERSITY OF ALBERTA
Special Graduate Student
Research Topic: "Transformer-based Active Learning for Efficient Essay Scoring", Under-review, Educational Measurement: Issues and Practice Journal

SEP 2019 - PRESENT AMIRKABIR UNIVERSITY OF TECHNOLOGY
Master of Science, Artificial Intelligence
Thesis: "Video Violence Recognition and Localization using a Semi-Supervised Hard-Attention Model", Published, Expert Systems with Applications Journal

SEP 2014 - DEC 2018 K. N. TOOSI UNIVERSITY OF TECHNOLOGY
Bachelor of Science, Computer Engineering
Thesis: "Text as Environment: A Deep Reinforcement Learning Text Readability Assessment Model"

RESEARCH EXPERIENCE

Hamid Mohammadi, Ehsan Nazerfard, "Video Violence Recognition and Localization using a Semi-Supervised Hard-Attention Model"

Master Thesis, In-press, Expert Systems with Applications Journal | [ScienceDirect](#)

The main novelty of the proposed method lies in the introduction of a semi-supervised hard attention mechanism. Using hard attention, the essential regions of videos are identified and separated from the non-informative parts of the data. A model's accuracy is improved by removing redundant data and focusing on useful visual information in a higher resolution. Implementing hard attention mechanisms using semi-supervised reinforcement learning algorithms eliminates the need for attention annotations in video violence datasets, thus making them readily applicable. The proposed model utilizes a pre-trained I3D backbone to accelerate and stabilize the training process.

Hamid Mohammadi, Seyed Hossein Khasteh, "Text as Environment: A Deep Reinforcement Learning Text Readability Assessment Model"

Under-review at Neurocomputing Journal | [arXiv:1912.05957](#)

Deep reinforcement learning models are demonstrated to be helpful in further improvement of state-of-the-art text readability assessment models. The main contributions of the proposed approach are the automation of feature extraction, loosening the tight language dependency of text readability assessment task, and efficient use of text by finding the minimum portion of a text required to assess its readability. The experiments on Weebit, Cambridge Exams, and Persian readability datasets display the model's state-of-the-art precision, efficiency, and the capability to be applied to other languages.

Hamid Mohammadi, Seyed Hossein Khasteh, Amin Nikoukaran, "A Machine Learning Approach to Persian Text Readability Assessment Using a Crowdsourced Dataset"

Published at 2020 28th Iranian Conference on Electrical Engineering (ICEE) | [arXiv:1810.06639](#)

In the present research, the first Persian dataset for text readability assessment was gathered and the first model for Persian text readability assessment using machine learning was introduced. The experiments showed that this model was accurate and could assess the readability of Persian texts with a

high degree of confidence.

Hamid Mohammadi, Seyed Hossein Khasteh, "A Fast Text Similarity Measure for Large Document Collections Using Multi-reference Cosine and Genetic Algorithm"

Published at Turkish Journal of Electrical Engineering Computer Sciences | [TJEECS](#)

In this paper, a new signature-based approach to text similarity detection is introduced which is fast, scalable, reliable and needs less storage space. The proposed method is examined on popular text document data-sets such as CiteseerX, Enron, Gold Set of Near-duplicate News Articles and etc. The results are promising and comparable with the best cutting-edge algorithms, considering the accuracy and performance.

Hamid Mohammadi, Amin Nikoukaran, "Multi-reference Cosine: A New Approach to Text Similarity Measurement in Large Collections"

Preprint | [arXiv:1810.03099](#)

In this paper, a new approach to batch text similarity detection is proposed by combining some ideas from dimensionality reduction techniques and information gain theory. The new approach is focused on search engines need to detect duplicated and near-duplicated web pages.

WORK EXPERIENCE

OCT 2021 - PRESENT

Computer Vision Engineer: FarazPardazan, Iran

My focus here is to develop web and mobile friendly computer vision solutions for automated identity evaluation and optical information extraction. I am involved in projects Face Detection and Recognition, Liveness Detection, Visual Brand Identification, Credit and ID card OCR

Website: [Farazpardazan.com](#)

JULY 2019 - SEP 2021

Computer Vision Engineer: Sensifai, Belgium

Building intelligent surveillance services, I was involved in several projects including face detection and recognition, fire detection, violence detection, object detection, motion localization, and so forth. Moreover, I participated in designing and implementing efficient real-time hardware-accelerated multi-stream video analysis tools.

Website: [Sensifai.com](#) | [Sentiligence.com](#)

SEP 2016 - SEP 2017

Junior Big-Data and Artificial Intelligence Engineer: Yooz Search Engine, Iran

My task as an artificial intelligence Engineer in this company was to help the web search team attain its goals by designing and implementing artificial intelligence solutions mainly related to Natural Language Processing and Machine learning. Some of these projects are Duplicate and near-duplicate document detection in big data applications, which mainly was about dimensionality reduction, and Persian text difficulty assessment and Persian transliteration, which were implemented in Big-Data environments.

Website: [Yooz.ir](#)

TEACHING EXPERIENCE

TEACHING ASSISTANT	Theory of Formal Languages and Automata Oct 2017 - Feb 2018, Sep 2018 - Feb 2019
	Computer Structure and Language Oct 2017 - Feb 2018, Feb 2018 - Jun 2018, Sep 2018 - Feb 2019
	Principles of Compiler Design Feb 2018 - Jun 2018
	Computer Networks Feb 2018 - Jun 2018
	Computer Architecture Oct 2017 - Feb 2018

COMPUTER SKILLS

FLUENT PROGRAMMING LANGUAGES	Python C++
MACHINE LEARNING CONCEPTS	Deep Architectures (Classification, Regression, Transformers, Recurrent) Computer Vision (Classification, Detection, Vectorization) Reinforcement Learning (DRL, A3C, Dyna, ...) Natural Language Understanding (Classification, Vectorization) Classical Models (SVM, Random Forest, ...)
FRAMEWORKS AND TOOLS	Tensorflow + Keras (CPU-GPU) Scikit-learn OpenCV Python NumPy, SciPy, Matplotlib Docker GStreamer framework and tools TensorRT Git Latex

LANGUAGES

PERSIAN:	Native
ENGLISH:	Full professional proficiency Duolingo: 140/160 (June 2022) Literacy: 150, Comprehension: 150, Conversation: 110, Production: 105 TOEFL-iBT: 106/120 (Sep 2018) Reading: 29, Listening: 30, Speaking: 23, Writing: 24

REFERENCES

DR. MARK GIERL	Professor, Canada Research Chair, University of Alberta mgierl@ualberta.ca
DR. EHSAN NAZERFARD	Assistant Professor, Amirkabir University of Technology nazerfard@aut.ac.ir
DR. SEYED HOSSEIN KHAJESTEH	Assistant Professor, K.N. Toosi University of Technology khajesteh@kntu.ac.ir