

S. M. Ali Modarressi

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Last update: Oct 2024

EDUCATION

March 2023 - Now	Ludwig-Maximilians-Universität München (LMU) <ul style="list-style-type: none">Ph.D. Computer ScienceSupervisor: Prof. Dr. Hinrich Schütze	Munich, Germany
August 2022 September 2019	Iran University of Science & Technology (IUST) <ul style="list-style-type: none">MSc. Artificial IntelligenceSupervisor: Dr. Mohammad Taher PilehvarGPA: 19.08/20Selected Coursework: Deep Learning, Machine Learning, Pattern Recognition, Image Processing, Reinforcement Learning, Data Mining	Tehran, Iran
July 2019 September 2014	University of Tehran (UT) <ul style="list-style-type: none">BSc. Electrical Engineering – CommunicationSelected Coursework: Introduction to Programming, Advanced Programming	Tehran, Iran

WORK EXPERIENCE

October 2024 - Now	Adobe Research <ul style="list-style-type: none">NLP Research Internship	Seattle, WA, United States
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PUBLICATIONS

MEXA: Multilingual Evaluation of English-Centric LLMs via Cross-Lingual Alignment [\[link\]](#)

A.H. Kargaran, **A. Modarressi**, N. Nikeghbal, J. Diesner, F. Yvon, H. Schütze

Consistent Document-Level Relation Extraction via Counterfactuals [\[link\]](#)

A. Modarressi, A. Köksal, H. Schütze

- Accepted to the Findings of the Association for Computational Linguistics: EMNLP 2024

MemLLM: Finetuning LLMs to Use An Explicit Read-Write Memory [\[link\]](#)

A. Modarressi, A. Köksal, A. Imani, M. Fayyaz, H. Schütze

RET-LLM: Towards a General Read-Write Memory for Large Language Models [\[link\]](#)

A. Modarressi*, A. Imani*, M. Fayyaz, H. Schütze

- Accepted to the AGI Workshop @ ICLR 2024

*Equal Contribution

DecompX: Explaining Transformers Decisions by Propagating Token Decomposition [\[link\]](#)

A. Modarressi*, M. Fayyaz*, E. Aghazadeh, Y. Yaghoobzadeh, M. T. Pilehvar

- Accepted to The 61st Annual Meeting of the Association for Computational Linguistics (ACL 2023)

*Equal Contribution

Guide the Learner: Controlling Product of Experts Debiasing Method Based on Token Attribution Similarities [\[link\]](#)

A. Modarressi, H. Amirkhani, M. T. Pilehvar

- Accepted to the 17th Conference of the European Chapter of the Association for Computational Linguistics (EACL 2023)

BERT on a Data Diet: Finding Important Examples by Gradient-Based Pruning [\[link\]](#)

M. Fayyaz*, E. Aghazadeh*, A. Modarressi*, M. T. Pilehvar, Y. Yaghoobzadeh, S. Ebrahimi Kahou

- Accepted to the 2nd workshop on Efficient Natural Language and Speech Processing (ENLSP-II) at NeurIPS 2022

*Equal Contribution

GlobEnc: Quantifying Global Token Attribution by Incorporating the Whole Encoder Layer in Transformers [\[link\]](#)

A. Modarressi*, M. Fayyaz*, Y. Yaghoobzadeh, M. T. Pilehvar

- Accepted to the 2022 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL 2022)

*Equal Contribution

AdapLeR: Speeding up Inference by Adaptive Length Reduction [\[link\]](#)

A. Modarressi*, H. Mohebbi*, M. T. Pilehvar

- Accepted to the 60th Annual Meeting of the Association for Computational Linguistics (ACL 2022)

*Equal Contribution

Not All Models Localize Linguistic Knowledge in the Same Place: A Layer-wise Probing on BERToids' Representations [\[link\]](#)

M. Fayyaz, E. Aghazadeh, H. Mohebbi, A. Modarressi, M. T. Pilehvar

- Accepted to the BlackboxNLP Workshop at the 2021 Conference on Empirical Methods in Natural Language Processing (EMNLP)

Exploring the Role of BERT Token Representations to Explain Sentence Probing Results [\[link\]](#)

H. Mohebbi*, A. Modarressi*, M. T. Pilehvar

- Accepted to the 2021 Conference on Empirical Methods in Natural Language Processing (EMNLP)

*Equal Contribution

RESEARCH INTERESTS

- Natural Language Processing (NLP)
 - LLM Agents, Tool use
 - Interpretability & Explainability
 - Factuality in LLMs
- Deep Learning
- Machine Learning

TEACHING EXPERIENCE

TA for Natural Language Processing (Graduate Course)

Tehran Institute for Advanced Studies (TelAS)

Instructor: Mohammad Taher Pilehvar

Spring 2021

TA for Digital Image Processing (Graduate Course)

Iran University of Science & Technology (IUST)

Instructor: Mohammad Reza Mohammadi

Fall 2020

HONORS & AWARDS

Outstanding Student Award

Iran University of Science & Technology, Iran
2020-2021

Best Undergraduate Project Award

University of Tehran, Iran
September 2018

International Young Physicists Tournament – Gold Medal

Bad Saulgau, Germany
July 2012

- Participated with Team of Iran
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RELATED ACADEMIC PROJECTS

- **Analyzed BERT's layerwise characteristics using linguistic probes** (Spring 2020): Using SentEval probing tasks, we applied a layerwise probing on pre-trained & several fine-tuned versions of BERT to emphasize a similar convexity in the layerwise performance. Using MLM heads, we show the MLM pre-training is responsible for this effect.
- **Implementation of a Coupled Generative Adversarial Networks (CoGAN)** (Spring 2020): Reviewed, analyzed, and implemented a CoGAN model. Trained with MNIST to learn a joint distribution of two types of digit image styles.
- **Self-supervised representation learning by predicting image rotations** (Fall 2019): Reimplemented the [paper's](#) algorithm for CIFAR10 rotation prediction and extracting useful representations for logistic regression over the 10 classes.

TECHNICAL SKILLS

Frameworks & Libraries

TensorFlow, Keras, HuggingFace, PyTorch, Numpy, Matplotlib, Redis

Programming Languages

Python, R, Bash, C++, MATLAB, JavaScript, PHP, Swift, Verilog

LANGUAGES

Persian: Native

English: Fluent – (IELTS Overall Band Score: 7.5 – L: 8.5, R: 7.5, W: 6.5, S: 7.5)