

Mohsen Fayyaz

CS PH.D. STUDENT · UNIVERSITY OF CALIFORNIA, LOS ANGELES

UCLA Computer Science Department, 404 Westwood Plaza, Engineering VI, Los Angeles, CA 90095-1596

✉ mohsenfayyaz@cs.ucla.edu | 🏠 mohsenfayyaz.github.io | 📧 mohsenfayyaz | 📺 mohsenfayyaz | 🎓 Mohsen Fayyaz

Education

University of California, Los Angeles

PH.D. IN COMPUTER SCIENCE

- advisor: Nanyun (Violet) Peng

Los Angeles, CA

Sep. 2023 - Present

University of Tehran

MASTER'S IN ARTIFICIAL INTELLIGENCE, COMPUTER ENGINEERING

- GPA: 20/20 (4/4)
- advisor: Yadollah Yaghoobzadeh

Tehran, Iran

Sep. 2021 - Aug. 2023

University of Tehran

B.SC. IN COMPUTER ENGINEERING

- GPA: 19.08/20
- Ranked 3rd among 103 Computer Engineering students

Tehran, Iran

Sep. 2017 - Sep. 2021

National Organization for Development of Exceptional Talents

DIPLOMA IN MATHEMATICS AND PHYSICS DISCIPLINE

- GPA: 19.68/20

Tehran, Iran

Sep. 2014 - Jun. 2017

Research Interests

- Natural Language Processing
- Deep Learning

Publications

DecompX: Explaining Transformers Decisions by Propagating Token Decomposition

[paper] [code] [video]

ACL 2023

- A. Modarressi*, Mohsen Fayyaz*, E. Aghazadeh, Y. Yaghoobzadeh, MT Pilehvar
- (* equal contribution)

BERT on a Data Diet: Finding Important Examples by Gradient-Based Pruning [paper]

ENLSP @ NeurIPS 2022

- Mohsen Fayyaz*, E. Aghazadeh*, A. Modarressi*, MT Pilehvar, Y. Yaghoobzadeh, S. Ebrahimi
- (* equal contribution)

GlobEnc: Quantifying Global Token Attribution by Incorporating the Whole Encoder Layer in Transformers [paper] [code] [video]

NAACL 2022
(Oral Presentation)

- Ali Modarressi*, Mohsen Fayyaz*, Yadollah Yaghoobzadeh, Mohammad Taher Pilehvar
- (* equal contribution)

Metaphors in Pre-Trained Language Models: Probing and Generalization Across Datasets and Languages [paper] [code] [video]

ACL 2022

- Ehsan Aghazadeh*, Mohsen Fayyaz*, Yadollah Yaghoobzadeh
- (* equal contribution)

Not All Models Localize Linguistic Knowledge in the Same Place: A Layer-wise Probing on BERToids' Representations [paper] [code] [blog]

BlackboxNLP @ EMNLP 2021

- Mohsen Fayyaz*, Ehsan Aghazadeh*, Ali Modarressi, Hosein Mohebbi, Mohammad Taher Pilehvar
- (* equal contribution)

Research Experience

Graduate Student Researcher at University of California, Los Angeles

UNDER SUPERVISION OF PROF. NANYUN (VIOLET) PENG

- Ph.D. Researcher at PLUS Lab

Los Angeles, CA

Fall 2023 - Present

Remote Collaborator at École de technologie supérieure

UNDER SUPERVISION OF PROF. SAMIRA EBRAHIMI AND PROF. YADOLLAH YAGHOOBZADEH

- BERT on a data diet: Finding important examples by gradient-based pruning (ENLSP @ NeurIPS 2022)

Montreal, Canada

Spring 2022

Graduate Research Assistant at University of Tehran

Tehran, Iran

UNDER SUPERVISION OF PROF. YADOLLAH YAGHOOBZADEH AND PROF. MOHAMMAD TAHER PILEHVAR

2021 - 2023

- Quantifying global token attribution by incorporating the whole encoder layer in Transformers. (NAACL 2022)
- Metaphors in pre-trained language models: Probing and generalization across datasets and languages. (ACL 2022)

NLP Research Intern at Tehran Institute for Advanced Studies (TIAS)

Tehran, Iran

UNDER SUPERVISION OF PROF. MOHAMMAD TAHER PILEHVAR

Summer 2021

- Layer-wise probing on BERT, XLNet, and ELECTRA representations for linguistic knowledge. (BlackboxNLP @ EMNLP2021)

Undergraduate Research Assistant at University of Tehran

Tehran, Iran

UNDER SUPERVISION OF PROF. AZADEH SHAKERY

Spring 2021

- Investigating toxicity detection knowledge in contextual language models and possible biases.

Work Experience

Data Scientist

Tehran, Iran

SOTOON

Jul. 2022 - Present

- Developed NLP/AutoML services including various ML tasks and models at large scale.

Machine Learning Engineer

Tehran, Iran

TAPSELL

Sep. 2021 - Jul. 2022

- Developed NLP engines and ML models for enhancing targeted advertising.

Honors & Awards

2021	Enrolled in the graduate school as a top student , Without passing the entrance examinations	University of Tehran
2020	F.O.E (Faculty of Engineering) Award , Ranked 1 st among all of 103 Computer Engineering students	University of Tehran
2019	F.O.E (Faculty of Engineering) Award , Ranked 3 rd among all of 103 Computer Engineering students	University of Tehran
2017	University of Tehran Scholarship , Received scholarship from the University of Tehran Sponsors Foundation as an exceptional talent	University of Tehran
2017	Ranked in top 0.4% in Konkur Exam , Of all 148,429 participants in Iran	Iran
2015	Second place in Khwarizmi Youth Award , An important national research award given annually by the President of Iran.	Iran

Teaching

TEACHING ASSISTANTSHIP

2020-2022	Artificial Intelligence , Prof. Yaghoobzadeh, Dr. Fadaei	University of Tehran
2019-2020	Formal Languages and Automata Theory , Prof. Hojjat	University of Tehran
2019-2020	Advanced Programming , Prof. Khosravi	University of Tehran
2019	Digital Logic Design , Prof. Navabi	University of Tehran

Professional Development

The following online courses were taken to acquire skills relevant to my research:

- Build Basic Generative Adversarial Networks (GANs), Coursera.org - Feb 2021 - Credential
- Deep Learning Specialization, Coursera.org - Sep 2020 - Credential
- Sequence Models, Coursera.org - Sep 2020 - Credential
- Convolutional Neural Networks, Coursera.org - Aug 2020 - Credential
- Structuring Machine Learning Projects, Coursera.org - Aug 2020 - Credential
- Improving Deep Neural Networks: Coursera.org - Aug 2020 - Credential
- Neural Networks and Deep Learning, Coursera.org - Aug 2020 - Credential

Skills

Programming	Python (PyTorch, sklearn, NumPy, Pandas, Tensorflow, PySpark), C++, Java, Java-script, SQL
Tools and Frameworks	PyTorch, Keras, Tensorflow, HuggingFace, Transformers, Git, React-Native, Android Studio
Languages	<ul style="list-style-type: none">• Persian: Native• English: Fluent (TOEFL score: 116/120, Reading: 29, Listening: 30, Speaking: 28, Writing: 29)

Notable Projects

Natural Language Processing Course Assignments @ University of Tehran Winter 2022

- Including Tokenization, Naive Bayes, RNN, LSTM, Transformers, Machine Translation, QA and NLU. (Pytorch)

Neural Networks Course Assignments @ University of Tehran Winter 2022

- Including CNN, RNN, GAN and RL. (Pytorch, Tensorflow)

Semantic Matching of Queries to Ads Summer 2021

- Building proper embeddings for queries and ads to achieve fast prediction of sponsored search advertising using their proximity in the same representation space. [repository]

Colorizing Grayscale Images Using Inception Network Summer 2020

- Modified an inception model and trained it on 10K images to colorize grayscale images. [repository]

Online Real-time Propeller LED Display Spring 2020

- Embedded Systems Final Course Project. https://www.youtube.com/watch?v=wf1WOrsO_tA

References

Mohammad Taher Pilehvar, mp792@cam.ac.uk

Yadollah Yaghoobzadeh, y.yaghoobzadeh@ut.ac.ir

Hossein Hojjat, hojjat@ut.ac.ir

TelAS

University of Tehran

University of Tehran