Yeganeh Kordi — Curriculum Vitae

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RESEARCH INTERESTS

I am broadly interested in AI, Machine Learning, and NLP, particularly, I'm interested in working on teaching machines via instructions, improving the performance of language models in zero-shot settings, and moving toward generalization and unification.

EDUCATION

○ **Bachelor of Science(Double degree)**   2016–2021
Amirkabir University of Technology   *Tehran-Iran*

- Electrical Engineering   *2016–2020*
  · Major: Control Systems
  · GPA: 3.84/4 (18.12/20)
  · Thesis: Designing the hardware for 3D eye-tracking
  Mentors: Mohammad Bagher Menhaj, Mohammad A. Khosravi

- Computer Engineering   *2018–2021*
  · Major: Artificial Intelligence
  · Minor: Computer Networking
  · GPA: 3.78/4 (17.78/20)
  · Thesis: Implementing a 3D eye-tracking software
  Mentor: Mohammad Rahmati

PUBLICATIONS

○ ◇Wang, Yizhong, ◇Swaroop Mishra, ♣Pegah Alipoormolabashi, ♣Yeganeh Kordi, Amirreza Mirzaei, Anjana Arunkumar, Arjun Ashok, et al. 2022. "Benchmarking Generalization via In-Context Instructions on 1,600+ Language Tasks." Empirical Methods in Natural Language Processing (EMNLP), 2022
  ◇ Co-first authors; ♣ Co-second authors, alphabetical order.

○ Khashabi, Daniel, Yeganeh Kordi, and Hannaneh Hajishirzi. 2022. "UnifiedQA-v2: Stronger Generalization via Broader Cross-Format Training." arXiv preprint arXiv:2202.12359.

RESEARCH EXPERIENCE

○ *Allen Institute for AI* and *H2lab at University of Washington*
  Mentors: Daniel Khashabi, Yizhong Wang
  Collaborating on NLP research projects, including: July 2021–present
- UnifiedQA v2
  · Introducing a cross-format question-answering system
- Natural instructions expansion
  · Creating a dataset of instructions and task-specific input/output data and introducing TK-Instruct model
- Language Models Self Instructing
  · Providing a Self Instructing framework for the Language Models

○ *JHU Center for Language and Speech Processing*
  Mentor: Daniel Khashabi
  Collaborating on NLP projects: August 2022–present
- Web Instructions
  · Introducing a benchmark for evaluating Web instructions

○ IT lab at university of Tehran
  Mentor: Mohammad Sayad Haghighi
  Several projects and researches, including but not limited to: June 2019–present
- NFC print system
  · Implementing a print management system for the department

- Eye tracking methods
  · Testing multiple options and algorithms to create the best possible software for the medical experiments.

HONORS

- Ranked 3rd in Electrical Engineering, Control Group, among more than 40 students.
- Ranked 14th in Electrical Engineering among more than 160 students.
- Ranked among top 10 percent in Computer Engineering.
- Ranked 148th in university entrance exam, among more than 70,000 participants.
- Ranked 19th in university graduate entrance exam, among more than 5,000 participants.
- Granted admission from the Talented Student Office of the Amirkabir University of Technology for double degree program.
- Granted direct admission from Talented Student Office of the Sharif University of Technology, Amirkabir University of Technology, and Tehran University for graduate study.
- Member of Iran's National Elites Foundation.

COMPUTER SKILLS

- **Programming Languages:** Python, Java, C/C++
- **ML and NLP:** SpaCy, NLTK, Hugging Face Tokenizers and Transformers, Fairseq, pandas, Sklearn, TensorFlow, Keras, OpenCV, CUDA, matplotlib, NumPy
- **Web-development:** HTML, CSS, JavaScript, Flask, Django
- **Databases:** MySQL, PostgreSQL
- **Hardware:** ARM, FPGA, VHDL, Verilog, Altium Designer, Proteus Design Suite
- **Cloud Computing:** Hadoop, HAProxy, Kubernetes, Docker
- **Developer Environments:** Jupyter, Colab, IntelliJ, Eclipse, PyCharm, VSCode
- **Other:** Matlab, Git, ROS, Gazebo, Wireshark, OMNeT++, VM VirtualBox

PROJECTS

- Implementing of 3D eye tracking method in order to use in medical experiments.
  - Setting up a proper 3D gaze tracking project
  - Designing a headset with eye cameras that is equipped with infrared illuminations
  - Designing a software to collect the 180-degree hemispherical strabismus scanning
  - Turning it into an MVP for field testing (real patient tests in an eye hospital)
- Implementing a Persian search engine from scratch
  - Preprocessing a dataset comprising 7000 Persian news
  - Scoring documents with TF-IDF
  - Building a KNN Similarity Search Engine
- Handwritten Recognition
  - Using OpenCV, Keras and TensorFlow to train a deep neural network
  - Designing a Multi Layer Perceptron (MLP) based pattern classifier
  - Comparing different methods
- Providing a face recognition system using PCA algorithm
  - Normalization of the training set
  - Incorporating principal component analysis with the facial recognition system.
- Designing a Smart Agriculture System
  - Using Raspberry Pi Board,ESP8266, Moisture sensor and Temperature sensor to Detect the soil moisture and the temperature.
  - Regulating water flow automatically from water tank to fields
- Designing a load balancer based on CPU and memory utilization
- Implementing a decentralized peer-to-peer network
- Providing a distributed parallel system
- Providing simulation of Phantom Omni using ROS and Gazebo
- Implementing a text editor using C

RELEVANT COURSES

- Artificial Intelligence
- Neural Networks and fuzzy logic
- Algorithms and Data Structure
- Machine Learning
- Data mining
- Statistics

TEACHING EXPERIENCES

- Teaching Assistant
  - Machine Learning   Fall 2021-Fall 2022
    - Instructor: Dr. Seyedin (Amirkabir University of Technology)
    - Holding NLP workshops, Designing the course's final project, Helping students complete projects.
  - Data Structures and Algorithm   Spring 2022
    - Instructor: Dr. Bagheri (Amirkabir University of Technology)
    - Defining Assignments and quizzes, Holding tutoring classes.
  - Algorithm Design   Fall 2021-Spring 2022
    - Instructor: Dr. Bagheri (Amirkabir University of Technology)
    - Defining Assignments and quizzes, Holding in-person office hours.
  - Data Mining   Fall 2021
    - Instructor: Dr. Amirmazlaghani (Amirkabir University of Technology)
    - Defining Assignments and projects.
  - Cloud Computing   Spring 2021
    - Instructor: Dr. Javadi (Amirkabir University of Technology)
    - Defining Assignments, Helping students complete projects.
  - Digital Logic Circuits   Fall 2020-Fall 2021
    - Instructors: Dr. Sedighi, Dr. Saheb Zamani (Amirkabir University of Technology)
    - Train and mentor TAs and Graders as a Head TA, Defining Assignments and quizzes, Holding tutoring classes, Holding office hours.

WORK EXPERIENCE

- *Amirkabir University of Technology*
  Full-stack web developer   April 2021-January 2022

POSITION OF RESPONSIBILITY

- Member of Technical Committee in IranOpen RoboCup Competition 2018
- Member of Student Scientific Association of electrical engineering at Amirkabir University of Technology

❶ **References, Further information, and Proofs are available upon Request**