SEYED ARSHAN DALILI

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Education

- **Bachelor in Computer Engineering** Sep. 2019 - Present
  Sharif University of Technology *Tehran, Iran*
  GPA: 3.91/4.00 (Average: 18.79/20.00)
  Last Year GPA: 4.00/4.00 (Average: 19.55/20.00)
- **Diploma of Mathematics** Sep. 2016 - Jun. 2019
  Shahid Beheshti School, National Organization for Development of Exceptional Talents (NODET) *Sari, Iran*
  GPA: 4.00/4.00 (Average: 19.63/20.00)

Publications

- Multimodal Word Sense Disambiguation
  Submitted to ACL 2023 - First Author
- Team SUT at SemEval-2023 Task 1: Prompt Generation for Visual Word Sense Disambiguation (B.Sc. Project)
  SemEval 2023 - First Author

Honors and Awards

- Outstanding GPA **(4.00/4.00)** among Computer Engineering Students at Sharif University of Technology, 2022.
- Ranked **6th nationwide** among more than **164,000** participants in Iran National University Entrance Exam (Konkour) in Mathematics Branch, 2019.
- Received **full scholarship** (tuition waiver) from Sharif University of Technology for Bachelor's degree, 2019.
- Admitted to National Organization for Development of Exceptional Talents (NODET), $\approx$ **2% Acceptance Rate**, 2013.

Research Interests

- Natural Language Processing (esp. Computational Semantics)
- Information Extraction & Retrieval
- Dialogue Systems
- Machine Learning (esp. Weak Supervision)

Research Experience

- **Visual Word Sense Disambiguation (B.Sc. Project)** Aug. 2022 - Mar. 2023
  Supervisor: Dr. Ehsaneddin Asgari *Sharif University of Technology*
  - Working on a model to select the appropriate image for ambiguous words in a given context.
  - Transform pictures and texts into a same space and bring semantically related pictures and texts.
  - Working on using pre-trained models like CLIP to select relevant images from ambiguous textual contexts.
- **Computational Semantics & Vision-Language** Aug. 2022 - Mar. 2023
  Supervisor: Dr. Ehsaneddin Asgari *Sharif University of Technology*
  - Developing a dataset that will enable models to learn the semantics and senses of a word in both the textual and visual contexts.
  - Exploring various methods for capturing semantics of texts.
  - Analyzing methods for enabling multimodal models to comprehend Natural Language.

- **Early Fake News Detection** Feb. 2022 - Dec. 2022
  Supervisor: Ms. Maryam Ramezani *Sharif University of Technology*
  - Working on a novel Deep Reinforcement Learning model to detect fake news early with a 3.3% improvement in earliness of PolitiFact dataset compared to Credible Early Detection Point model.
  - Implemented Credible Early Detection Point model with Pytorch to make it easier to use compared to paper's original Tensorflow V1 and verified by getting same results as paper. [code]
  - Reviewed fake news detection models such as Early Detection of Fake News on Social Media Through Propagation Path Classification with Recurrent and Convolutional Networks.

Teaching Experience

- **Artificial Intelligence** Sep. 2022 - Feb. 2023
  Instructor: Prof. Mohammad Hossein Rohban *Sharif University of Technology*
  Designing practical assignments about local search, reviewing assignments about continuous optimization, designing questions for mid-term, and grading assignments.
- **Modern Information Retrieval** Sep. 2022 - Feb. 2023
  Instructor: Prof. Hamid Beigy *Sharif University of Technology*
  Holding TA classes, creating practical coursework, supervising, and grading assignments
- **Computer Architecture** Feb. 2022 - Sep. 2022
  Instructor: Prof. Hamid Sarbazi-Azad *Sharif University of Technology*
  Grading assignments, mid-term, and final exam and writing solutions for mid-term and final exams.
- **Computer Structure and Language** Sep. 2021 - Feb. 2022
  Instructor: Prof. Hamid Sarbazi-Azad *Sharif University of Technology*
  Designing projects with practical questions in MIPS processor.
- **Fundamentals of Electrical and Electronic Circuits** Sep. 2021 - Feb. 2022
  Instructor: Prof. Ali Mohammad Afshin Hemmatyar *Sharif University of Technology*
  Thevenin-Norton Equivalencies and Laplace Transform theoretical assignments and grading.
- **Advanced Programming** Sep. 2020 - Feb. 2021
  Instructor: Dr. Vahid Salmani *Sharif University of Technology*
  Grading practical coursework and project in Java language.

Work Experience

- **Advisor, National University Entrance Exam (Konkour)** Jun. 2020 - Feb. 2021
  Various Institutions and Private *Sari, Iran*
- **Tutoring, High School Mathematics** Jun. 2020 - Feb. 2021
  Various Institutions and Private *Sari, Iran*
- **Tutoring, High School Physics** Jun. 2020 - Feb. 2021
  Various Institutions and Private *Sari, Iran*

Selected Course Projects

- **Sentiment Analysis for Friends show script [code]**:
  Natural Language Processing - Supervisor: Dr. Ehsaneddin Asgari - Fall 2022
- **Search engine for crawled news using Boolean, TF-IDF, FastText, Transformers, and Elasticsearch models & classification, clustering, and link analysis for crawled news [code]**:
  Modern Information Retrieval - Supervisor: Dr. Ehsaneddin Asgari - Spring 2022
- **Create a model to detect numerical values and physical quantities in Persian texts with the ability to convert physical quantities [code]**:
  Modern Information Retrieval- Supervisor: Dr. Ehsaneddin Asgari - Spring 2022
- **Introduction to Stanza NLP model and reviewing its structure [slides] [video]**:
  Numerical Computations - Supervisor: Dr. Fatemeh Baharifard - Spring 2021
- **Training an agent to play Atari using Deep Reinforcement Learning [code]**:
  Artificial Intelligence - Supervisor: Prof. Mohammad Hossein Rohban - Fall 2021

Relevant Courses

Artificial Intelligence	**20.0/20.0**
Modern Information Retrieval	**20.0/20.0**
Linear Algebra	**19.6/20.0**
Data Structures and Algorithms	**20.0/20.0**
Design Algorithms	**19.8/20.0**
Scientific and Technical Presentation	**19.4/20.0**
Numerical Computations	**20.0/20.0**
Game Theory	**20.0/20.0**
Computer Simulation	**20.0/20.0**

Skills Summary

- **Programming Languages**: Python, C, C++, Java, SQL, Verilog, Assembly
- **Packages and Applications**: Pytorch, Tensorflow, Sklearn, NLTK, Scipy, Numpy, Pandas, Django, Modelsim, Proteus Design Suite
- **Tools**: Git, Docker, Jira, PostgreSQL, LaTeX

Language Proficiency

- **Farsi**: Native
- **English**: Fluent
  TOEFL iBT®: 116 (Reading: 30, Listening: 30, Speaking: 28, Writing: 28)
  GRE General®: Quantitative Reasoning: 170, Verbal Reasoning: 149, AWA: 3.5

Extracurricular Activities

Loves running / Playing video games / Movie buff / Photography / Exploring new places (Climbing,$\cdots$)

References

Ehsaneddin Asgari
(1) Postdoctoral Researcher
(2) NLP Lead, AI Experts@AI Innovation
(1) Department of Computational Biology, Helmholtz Center for Infection Research
(2) Data:Lab Munich, Volkswagen AG
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