AmirArshia **Hemmat**

COMPUTER ENGINEERING STUDENT

CAMP chair, Technical University of Munich

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Education

Technical University of Munich *(TUM)*	*Munich, Germany*
VISITOR STUDENT RESEARCHER IN CAMP	*Jun. 2023 - PRESENT*

- Advisor: **Prof. Nassir Navab**

Sharif University of Technology *(SUT)*	*Tehran, IRAN*
STUDENT RESEARCHER IN RIML	*Nov. 2022 - PRESENT*

- Advisor: **Prof. Mohammad Hossein Rohban**

University of Isfahan *(UI)*	*Isfahan, IRAN*
B.S. IN COMPUTER ENGINEERING	*Sept. 2019 - PRESENT*

- **GPA: 3.83 out of 4**
- **GPA of last four semester: 4 out of 4**
- Thesis topic: *Graph Fusion in Multi-modal Networks with Zero-shot Evaluation*

Rsesearch Interests

Zero-shot Learning, Vision-linguistic Models, Explainable AI,VQA, Self-supervised Learning, Geometric Deep Learning

Publication

CLIP Exhibits Improved Compositional Generalization Through Representation Disentanglement.	*ICLR 2024*
REZA ABBASI, AMIRARSHIA HEMMAT, MAHDI SAMIEI, MOHAMMAD HOSSEIN ROHBAN, MAHDIEH SOLEYMANI BAGHSHAH	*Submitted*

Research Experiences

3D vessel segmentation using geometric approaches	*Technical University of Munich*
PROF. NASSIR NAVAB	*May 2023- Present*

The purpose of this research is to use different geometric techniques to preserve the structure in **vessel** segmentation for 3D images.

Counterfactual Modelling using vision-linguistic models	*Technical University of Munich*
PROF. NASSIR NAVAB	*Aug 2023- Present*

In this research, we combine counterfactual modeling and vision-linguistic models with the help of knowledge graphs and logical data relationships.

Vision-Linguistic Models	*Sharif University of Technology*
PROF. MOHAMMAD HOSSEIN ROHBAN	*Feb 2023 - Oct 2023*

From Feb 2023, I started research in the field of Vision-Linguistic Models and Robustness in the RIML lab under the supervision of Professor Rohban at Sharif University of Technology.

Zero-shot Learning in Medical domain	*University of Isfahan*
DR. PEYMAN ADIBI	*Aug 2021 - Nov 2022*

From Aug 2021, we started research in the field of Zero-shot Learning in the ILS lab under the supervision of Dr. Peyman Adibi. Our goal in this research is to use Geometric deep learning and Zero-shot learning to unify Zero-shot modalities.

Text summarization using Graph Neural Network *University of Isfahan*
Dr. Hamidreza Baradaran *Feb 2022 - Aug 2022*
Research in the field of natural language processing with the help of geometric deep learning for text summarization under the supervision of Dr. Hamidreza Baradaran Kashani.

Honors & Awards

2023	**TUM Summer Research Fellowship**, Technical University of Munich	*Munich, Germany*
2023	**Top 5% Academic Ranking**, University of Isfahan	*Isfahan, Iran*
2022	**2nd place (Among +50 teams)**, National Data Science Competition	*Isfahan, Iran*
2020	**22nd in ICPC Asia Tehran**, ICPC west Asian Internet Online Programming Contest	*Tehran, Iran*
2020	**3rd place (Among +80 teams)**, Poytek business summer school	*Isfahan, Iran*
2015	**Math Kangaroo diploma**, Diploma of Honor in International Kangaroo Mathematics Competition	*Tehran, Iran*

Teaching Assistant

2023	**Deep Learning Course Graduate Course**, Dr. Emad FatemiZadeh	*SUT*
2023	**Machine Learning Course**, Dr. Peyman Adibi	*UI*
2023	**Knowledge Systems Course Graduate Course**, Dr. Reza Ramezani	*UI*
2023	**Medical Image Processing Course**, Dr. Emad FatemiZadeh	*SUT*
2023	**Advanced Programming Course**, Dr. Amin Fazli	*SUT*
2023	**Linear Algebra Course**, Dr. Peyman Adibi	*UI*
2023	**Artificial Intelligence Course**, Dr. Hossein Karshenas	*UI*
2022	**Engineering Probability and Statistics Course**, Dr. Abolfazl Motahari	*SUT*
2022	**Fundamental Programming Course**, Dr. Amin Fazli	*SUT*
2022	**Artificial Intelligence Course**, Dr. Hossein Karshenas	*UI*
2022	**Advanced Programming Course**, Dr. Behrouz Shahgholi	*UI*
2022	**Computer Architecture, (Two Times)**, Dr. Zohre Beiky	*UI*
2021	**Object Oriented Analysis and Design**, Dr. MohammadReza Sharrbaaf & Dr. Bahman Zamani	*UI*
2021	**Fundamentals of Robotics Course**, Dr. HamidReza Baraadran	*UI*
2021	**Data structures Course**, Dr. Reza Ramezani	*UI*
2021	**Advanced Programming Course, (Three Times)**, Dr. Reza Ramezani	*UI*
2020	**Fundamental Programming Course**, Dr. Hossein Mahvash Mohammadi	*UI*
2020	**Machine Learning**, Amin Mousavi	*Taarlab (UT)*

Associations

BigData Lab *UI*
Board Member *2022 - 2023*
- Research in the field of QA systems in Big data lab under the supervision of Dr. Afsaneh Fatemi and Reza Ramezani
- My second task in this work has been to collect and re-examine the models implemented in the past.

Rasta *SUT*
Chairman, Head of Development, Core board member *2023 - PRESENT*
- Head of Development
- Chairman of Rasta

Community for Artificial Intelligence *UI*
Chairman *2020 - 2023*
- Organize different seminars and talks about AI

TEDx University of Isfahan *UI*
Organizer, Co-organizer, Advisor *2020 - PRESENT*
- Advisor of 4th TEDx University of Isfahan.
- Organizer of 3rd TEDx University of Isfahan.
- Co-organizer of 2nd TEDx University of Isfahan.

Skills

Machine Learning Tools

Proficient **Pytorch, NetworkX, Scikit-learn, OpenCV, Pandas, Numpy, MathPlotLib**,

Familiar **Tensorflow, Keras, Bokeh**,

Programming Language

Proficient **Python, C++**,

Familiar **Java, Matlab, VHDL**,

Language

Native **Persian**,

Advanced **English**,