

RESEARCH INTERESTS

Generative Models, Multimodal AI, Compositionality, Controllable Image Editing & Creative AI

EDUCATION

Technical University of Darmstadt MS in Artificial Intelligence & Machine Learning	Darmstadt, Germany Oct 2024 - Present
Bu-Ali Sina University BS in Computer Engineering • CGPA: 18.19/20, Ranking: 1 <sup>st</sup> out of 50	Hamedan, Iran Sep 2019 - Mar 2024

EXPERIENCE

Multimodal AI Lab, TU Darmstadt Student Research Assistant - Advisors: Prof. Anna Rohrbach, Prof. Marcus Rohrbach • Developing a method to learn relational concepts in text-to-image diffusion models.	Darmstadt, Germany Apr 2025 - Present
Robot Intelligence & Vision Lab Undergraduate Student Researcher - Advisor: Prof. Hassan Khotanlou • Collaborated on a project focused on cloud removal from satellite imagery. • Proposed an autoencoder-based model for low-light image enhancement. Published a journal paper.	Hamedan, Iran May 2023 - Jun 2024
Intelligent Systems & Machine Learning Lab Undergraduate Student Researcher - Advisor: Prof. Muharram Mansoorizadeh • Proposed a framework and curated a dataset to detect and grade diabetic retinopathy. Published a journal paper.	Hamedan, Iran Oct 2022 - Apr 2023
AIEX Co. Software Developer • An all-in-one platform for training & deploying deep learning-based computer vision models. [YouTube] • Developed multiple services within Software and AI teams, including dataset preparation tools, data augmentation pipeline, image tiling, dataset health-check, backend APIs, etc. using Python, PyTorch, and Django.	Vancouver, Canada · Remote Oct 2021 - Mar 2023

PUBLICATIONS

1. H. Shakibania<sup>†</sup>, S. Raoufi<sup>†</sup>, H. Khotanlou, “CDAN: Convolutional dense attention-guided network for low-light image enhancement,” *Digital Signal Processing*, 2024. [arXiv][Code]

2. H. Shakibania, S. Raoufi, B. Pourafkham, H. Khotanlou, M. Mansoorizadeh, “Dual branch deep learning network for detection and stage grading of diabetic retinopathy,” *Biomedical Signal Processing and Control*, 2024.

<sup>†</sup> denotes equal contribution.

HONORS & AWARDS

5 <sup>th</sup> Place in the Computer Vision Track, Tech Olympics 2024, among 455 teams, Tehran, Iran	Oct 2024
Ranked 1 <sup>st</sup> in the Department of Computer Engineering, Class of 2024, Bu-Ali Sina University	Mar 2024
Outstanding Undergraduate Student for Academic Excellence, Bu-Ali Sina University	Jan 2024
2 <sup>nd</sup> Place in the Data-Driven Decision-Making Competition, Bu-Ali Sina University	May 2023

TEACHING EXPERIENCE

Teaching Assistant at Bu-Ali Sina University • Digital Image Processing (graduate course), Foundations of Computer Vision, Foundations of Data Mining, Design of Algorithms, Databases, Data Structures	2022 - 2024
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SKILLS & TECHNICAL TOOLS

Programming: Python, C/C++  
ML/CV Tools & Libraries: PyTorch, OpenCV, Scikit-Learn, Pandas, NumPy, Matplotlib  
Languages: Persian (native), English (proficient, IELTS Academic 7.5)  
Others: Git,  $\LaTeX$ , Linux

## RELEVANT COURSEWORK

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### Technical University of Darmstadt

- *Computer Vision I, Probabilistic Graphical Models*

### Bu-Ali Sina University

- *Pattern Recognition, Foundations of Computer Vision, Foundations of Data Mining, Information Retrieval & Web Search, Artificial Intelligence & Expert Systems, Design of Algorithms, Data Structures*

### Oxford Machine Learning Summer School 2023

- *43 hours of lectures on ML fundamentals, cases, and applications.* [[Certificate](#)]

## REFERENCES

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### Prof. Hassan Khotanlou

Iran

*Professor, Bu-Ali Sina University*

- Email: [khotanlou@basu.ac.ir](mailto:khotanlou@basu.ac.ir)

### Prof. Muharram Mansoorizadeh

Iran

*Associate Professor, Bu-Ali Sina University*

- Email: [mansoorm@basu.ac.ir](mailto:mansoorm@basu.ac.ir)