

# Hossein Fathollahian

PHD STUDENT, DEPARTMENT OF COMPUTER SCIENCE, COLLEGE OF ENGINEERING  
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## Research Interests

Passionate about data science, engineering, and visualization. Interested in big data, machine learning, computer vision, and medical image processing. Focused on turning complex data into clear insights using machine learning and AI.

## Education

2024 Jan- Spring 2028 GPA=4.0/4.0	<b>Ph.D. in Computer Science</b>	Chicago, IL, USA
	University of Illinois Chicago (UIC) Advised by Professor Georgeta-Elisabeta Marai	
2010 - 2012 GPA=3.8/4.0	<b>M.S. in Telecommunication Engineering</b>	Tehran, Iran
	Shahid Beheshti University of Tehran (SBU) Advised by Professor Farah Torkamani-Azar	
2006 - 2010 GPA=3.8/4.0	<b>B.S. in Electronics Engineering</b>	Semnan, Iran
	Semnan University (SU) Advised by Professor Saeed Mozafari	

## Skills

### Programming Languages:

JavaScript, TypeScript, Python, HTML, CSS, SQL

### Frameworks and Libraries:

Pandas, NumPy, scikit-learn, Flask, D3.js, Three.js, React.js, Next.js, Node.js

### Developer Tools:

Anaconda, Unity, Git, LaTeX, Visual Studio Code, Observable, Docker

### Relevant Coursework:

Visual Data Science, Big Data Visualization and Analytics, Visualization and Visual Analytics, Computer Graphics, Human-Computer Interaction, Database Systems, Data Mining and Text Mining

## Professional Experience

Jan. 2024 - Present	<b>University of Illinois Chicago</b>	Chicago, IL, USA
	Graduate Research Assistant Advisor: Prof. Georgeta-Elisabeta Marai	
	<ul style="list-style-type: none"><li>• Designed, prototyped, developed, and evaluated visual analytics systems in collaboration with various domain experts, driving innovation and application in real-world scenarios.</li><li>• Conducted research in computer vision, focusing on camera position on multidimensional biomedical images.</li><li>• Developed and applied advanced techniques for improving accuracy in mammography image analysis, specifically for axillary lymph node detection.</li></ul>	

Spring & Fall 2024 - Spring 2025	<b>University of Illinois Chicago</b> Graduate Teaching Assistant Instructors: Prof. Scott Reckinger, Prof. Mark Hodges CS 211: Computer Programming practicum. CS 141: C++ programming, <b>MENIC Co.</b>	Chicago, IL, USA
Jan. 2017 - Sep 2023	Head of Low voltage system design and Research and Development CEO: Dr. Feiyz Designing, Consulting, and Implementing Telecommunication and Low Voltage Systems in Industrial Plants and Buildings.( CCTV, Telephone, Speakers, Fire alarms, Paging, and Computer Networks). Leading innovation and strategy in research and development to drive technological advancement and growth.	Tehran, Iran
Mar. 2015 - Dec 2016	<b>FATH Gostar Co.</b> Electrical System designer for residential building CEO: Eng. Zafarmand Electrical Power System, Lighting, BMS, Fire alarms.	Semnan, Iran
Nov. 2011 - Dec 2012	<b>Image Processing Specialist</b> Shahid Beheshti University Image processing lab/MATLAB and Python Programmer Mentor: Prof. Torkamani-Azar Image and Video Feature Extraction and Pattern Recognition in textiles and Painting Quality Measurement.	Tehran, Iran

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## Research Projects

Fall 2025	<b>Optimizing Camera Position for Minimal Occlusion and Maximum Interaction</b> This project focuses on determining the best camera placement to reduce visual obstructions while enhancing interaction efficiency, using computational techniques and analysis.
Summer 2024	<b>AI-Powered Lymph Node Detection in Mammography using in early cancer detection</b> This project utilizes AI and advanced image processing techniques to detect lymph nodes in mammography images, aiding in early diagnosis and improving accuracy in breast cancer assessment.
Spring 2024	<b>3D MAZE (Video Game Design Project)</b> A 3D Unity game where players navigate a dynamic maze that extends across all six cube sides, using movement, environmental manipulation, and memory to solve challenges.

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## Awards & Honours

2022	<b>MENIC Co</b> Awarded R&D leadership at MENIC Co for innovation in company productions and outstanding contributions.
2010-2012	<b>Academic Top Student</b> Awarded during B.S. studies. The university granted the award recognition of academic Top Students, the Second rank among 135 students. Awarded during M.S. studies. The university granted the award recognition of academic merit, the first rank among 32 students.

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## Publications

J: journal, C: conference/symposium, W: workshop

Accepted:

[J] 2015	Farah Torkamani-Azar, Hassan Imani, <b>Hossein Fathollahian</b> , "Video quality measurement based on 3-D. Singular value decomposition" <i>Journal of Visual Communication and Image Representation</i> . (Volume 27, February 2015, Pages 1-6)
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