

# İsmail Can Yağmur

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<https://github.com/canyagmur>

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I am a Computer Science PhD student at the University of Rochester working with Prof. Mujdat Çetin on inverse problems in medical imaging, currently exploring uncertainty quantification for self-supervised image restoration. I have over three years of research experience in deep learning-based multispectral image matching, satellite-based building height estimation, and radar signal classification. I have authored seven publications, including three first-author papers.

## EDUCATION

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### PhD in Computer Science

University Of Rochester

Rochester, NY • 08/2025 - 06/2030

Working with Prof. Müjdat Çetin on inverse problems in medical imaging, currently focusing on self-supervised image restoration and uncertainty quantification. I'm building on Noise2Noise-style methods and exploring how to bring both aleatoric and epistemic uncertainty into self-supervised reconstruction. We're also collaborating with Prof. Aydogan Özcan (UCLA) on adding uncertainty estimation to a point-of-care diagnostic device (CL-VFA) used for detecting cardiac events, connecting our work to a real medical system.

### M.Sc. in Computer Science

Özyeğin University

Istanbul, TURKEY • 09/2023 - 06/2025

I worked with Prof. Dr. Hasan Fehmi Ateş on various computer vision challenges. My primary focus was on image matching using advanced deep learning techniques. Additionally, I was engaged in a project aimed at estimating building heights from satellite images in densely populated urban areas. I successfully completed my M.Sc. degree with a GPA of 3.91/4.00.

### B.Sc. in Computer Science

Özyeğin University • GPA: 3.85

Istanbul, TURKEY • 09/2019 - 06/2023

100% Performance Scholarship, Valedictorian

### B.Sc. in Electrics & Electronics Engineering

Özyeğin University • GPA: 3.86

Istanbul, TURKEY • 09/2020 - 06/2023

Double Major

## PUBLICATIONS

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### XPoint: A Self-Supervised Visual-State-Space based Architecture for Multispectral Image Registration

03/2026

IEEE Access

First author; published in *IEEE Access*. Available at:  
<https://ieeexplore.ieee.org/abstract/document/11414423>

### BuildMamba: A Visual State-Space Based Model for Multi-Task Building Segmentation and Height Estimation from Satellite Images

03/2026

<https://arxiv.org/abs/2603.08523>

### CS-REG-NET: A Self-Supervised Visual-State-Space based Architecture for Cross-Spectral Registration of Thermal and Optical Imagery

05/2025

SIU

First author; this work received the Best Paper Award at the 33rd Signal Processing and Communications Applications Conference (SIU 2025), and the thesis presentation based on this project earned 3rd place in the conference's thesis competition.

<https://ieeexplore.ieee.org/abstract/document/11112294>

## **Visual State-Space Based Multi-Task Learning for Building Segmentation and Height Estimation** 03/2025

IGARSS

Co-author; contributed to the development of a Visual State-Space architecture for joint building segmentation and height estimation. Accepted to IGARSS 2025.

<https://ieeexplore.ieee.org/document/11242380>

## **Improved homographic adaptation for keypoint generation in cross-spectral registration of thermal and optical imagery** 10/2023

SPIE Image and Signal Processing for Remote Sensing XXIX

First author

<https://www.spiedigitallibrary.org/conference-proceedings-of-spie/12733/2678307/Improved-homographic-adaptation-for-keypoint-generation-in-cross-spectral-registration/10.1117/12.2678307.short>

## **Swin transformer based siamese network for thermal and optical image registration** 07/2023

IEEE, Signal Processing and Communications Applications Conference (SIU)

Co-authored, I contributed to building of swin-transformer based architecture for thermal and optical image registration.

<https://ieeexplore.ieee.org/abstract/document/10224035>

## **Classifying LPI radar waveforms with time-frequency transformations using multi-stage CNN system** 09/2022

IEEE, International Radar Symposium (IRS)

Co-authored, I contributed to building of multi-stage CNN system.

<https://ieeexplore.ieee.org/abstract/document/9904993>

### WORK EXPERIENCE

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**Özyeğin University** 09/2019 - Present  
**Graduate Researcher • Full-time** Istanbul, TURKEY

Worked on multiple nationally funded research projects supported by TÜBİTAK (Turkey's NSF-equivalent).

- **TÜBİTAK 1001 Project (Researcher, 2025–present):** Contributing to the design and development of “*Deep Learning–Based Adaptive System Design for Multimodal Image Matching*”. Played a significant role in formulating the project's technical direction and methodology for robust multimodal image matching and registration. Project No. 125E200
- **TÜBİTAK 1505 (Graduate Researcher, 2023–2025):** Designed deep learning systems for building height estimation from satellite imagery and multispectral image registration in an industry–university partnership. Project No: 5230108
- **TÜBİTAK 1003 (Research Intern, 2021–2023):** Contributed to a large national project (comparable to an NSF Medium/Large grant) on wide-area surveillance. Focused on image alignment and cross-spectral registration. Project No: 118E891
- **TÜBİTAK 2247-C STAR (Research Intern, 2021–2022):** Selected for a competitive undergraduate research fellowship (similar to an NSF REU). Researched on optical-thermal image matching.

- **Radar Signal Processing (2021–2022):** Researched LPI radar waveform classification using multi-stage CNNs and advanced time-frequency transforms (FSST, SPWVD, CWT).
- **OzU Rover Team – Autonomy Division (2019–2021):** Served as Autonomy Division Team Lead. Developed algorithms for robotic arm control and soil/rock classification using OpenCV. Finalist at the University Rover Challenge and European Rover Challenge.

## Baykar Technologies

07/2023 - 09/2023

### Artificial Intelligence Software Engineer • Internship

Istanbul, TURKEY

- Worked on homography applications such as video stabilization and compensation.
- <https://github.com/canyagmur/video-compensation>

## VOLUNTEERING & LEADERSHIP

### Ozyegin University

09/2023 - Present

Teaching Assistant

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- **Computer Networks (CS447):** Assisted students by answering their questions, proctoring exams, and evaluating and grading their papers.

- **Introduction to Deep Learning (CS466/566):** Managed homework evaluations, proctored exams, and provided problem-solving assistance to students.

- **Computer Vision (CS423/523):** Graded homework assignments, proctored exams, and offered guidance to students on course topics and assignments.

- **Introduction to Programming (CS104):** Attended all lab sessions, supported students during lab and office hours, and managed exam proctoring and grading.

## AWARDS & SCHOLARSHIPS

### PhD Fellowship, University of Rochester

08/2025

University of Rochester

### Graduate Full-tuition scholarship

09/2023

Ozyegin University

### Undergraduate Full-tuition scholarship

09/2018

Özyeğin University

## CERTIFICATIONS

### IELTS ACADEMIC: 7.5 , C1

01/2024 - 01/2026

IELTS

### European Rover Challenge 2020 Participation Certificate

09/2020 - Present

European Rover Challenge

## SKILLS

### ML & CV

- PyTorch, Deep Learning, Machine Learning, Computer Vision, Image Registration, Multispectral Image Matching, Uncertainty Quantification (UQ), Self-Supervised Learning

### Robotics & Systems

- ROS (Robot Operating System)
- Microcontrollers (Arduino)
- Raspberry Pi
- Embedded Systems

### Programming & Software Development

- Python
- C++
- MATLAB
- Java
- Kotlin

## **Tools & Frameworks**

- OpenCV
- Linux (Ubuntu)
- Git
- OrCAD PSpice
- Android Development