




# Sarper Yurtseven

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## EDUCATION

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### Mathematical Engineering, *Master of Science*

Politecnico di Milano

2024 — Present

► with a focus on **Computational Science and Learning**

### Mathematics, *Bachelor of Science*

Yildiz Technical University

2020 — 2024

► In my thesis, I have demonstrated occurrence of **Hopf bifurcation** for a dynamical system by **linearizing** the system around its equilibrium point. [link](#)

► **Peer consultant** for the department of Mathematics.

## ACADEMIC EXPERIENCE

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### Research Intern @Topological Machine Learning Group, UB

Summer 2024

*University of Barcelona*

- Worked on **Cellular Transformers** (Rubén, et al.)
- Contributed to project by implementing attention mechanisms that works on  $\approx$  linear time. I used to mimic methods of the already known attention mechanism such as *Cosformer*, *Linformer*, *Performer*, and *Clustered Attention*.

### Research Intern @Rehg Lab

Summer 2023

*Georgia Institute of Technology*

Remote

- Worked on an approach for **image editing** using latent (h-)space in **diffusion models**, implementing a “Delta-h” generator to change continuous attributes (e.g. azimuth, elevation) without retraining the model. Although the project ended inconclusively, it provided insight into the efficient control of nonlinear transformations. ► **results**

### Research Intern @Astromusers

Sep 2022 — Mar 2023

*Princeton University*

Remote

- Worked on methods to enhance photometric legacy in space telescopes through **unsupervised** and **supervised** learning methods, focusing on **exoplanet detection** using JWST coronagraphic data. Built and open-sourced an end-to-end pipeline ► **AI-Boosted-Coronagraphy**

## PROFESSIONAL EXPERIENCE

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### Open Source Contributor

June 2024 — Aug 2024

*Google Summer of Code 2024*

- Developed an end-to-end pipeline that trains **SinGAN-Seg**, **DDIM**, and **VAE** models for synthetic image generation, along with **MedSAM** and **U-Net** for segmentation. Also created a GUI enabling dataset selection, model-based image generation, and segmentation. ► **repository**

### Data Analysis Intern

Jan 2022 — March 2022

*ASSIA, Inc.*

Remote

- Analyzed **smart house data** to reveal significant correlations among users, devices, and their interactions. Combined **advanced data analysis** and visualization methods with **unsupervised techniques** (K-means clustering, PCA) to expose hidden patterns.

## VOLUNTEER WORK

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### inzva

Istanbul, Turkey

*AI Team Member*

2022 — Present

- At inzva, I **communicate** and **share scientific knowledge** across diverse audiences. As part of the AI Team, I co-organized **Google ML Bootcamp 2023 Turkey** and **Google ML Bootcamp 2022 Turkey**, each spanning 6-month modules and achieving an approximately **70%** graduation rate both years. I also **led** the development of a **deep learning lecture series**, designing a cutting-edge curriculum featuring **state-of-the-art** techniques and models. [link](#)

### Matematik Dunyasi Archive Team

Istanbul, Turkey

*Writer and Editor*

September 2021 — January 2024

- Volunteered with the archive team for *Matematik Dunyasi*, a popular mathematics journal of the **Turkish Mathematical Society**, where I transcribed older issues (1991–2001) into  $\text{\LaTeX}$  format. This effort makes historical mathematical content freely accessible on the journal’s website, **matematikdunyasi.com**, reaching a broader audience.

## WORKSHOPS/INVITED TALKS

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- United Nations Development Programme SGD AI LAB 2023
- Get Your Hands Dirty in AI 2022
- Morethan101 Workshops 2022