

Sarper Yurtseven



EDUCATION

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

- Graduated with **honors**.
- In my thesis, I have demonstrated occurrence of **Hopf bifurcation** for a dynamical system by **linearizing** the system around its equilibrium point.
- **Peer consultant** for the department of Mathematics.

ACADEMIC EXPERIENCE

Undergraduate Researcher @Topological Machine Learning Group, UB

University of Barcelona

Summer 2024

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

Undergraduate Researcher @Rehg Lab

Georgia Institute of Technology

Summer 2023

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. The project provided insight into the efficient control of nonlinear transformations.

Undergraduate Researcher @Astromusers

Princeton University

Sep 2022 — Mar 2023

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

PROFESSIONAL EXPERIENCE

AI Engineer

Rasyona

Nov 2025 — Present

- Building and deploying LLM-driven orchestrations. Creating tools for SAP Basis automation operations and integrating them with LangChain/LangGraph agents.

Open Source Contributor

Google Summer of Code 2024

June 2024 — Aug 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.

Data Analysis Intern

ASSIA, Inc.

Jan 2022 — March 2022

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.

PUBLICATIONS

Journal & Conference Papers

- Barsbey M., Ballester R., Demir A., Casacuberta C., Hernández-García P., Pujol-Perich D., **Yurtseven S.**, Escalera S., Battiloro C., Hajij M., Birdal T., *Higher-Order Molecular Learning: The Cellular Transformer* , **ICLR 2025 Workshop on GEM**

- Nemeti, E., **Yurtseven, S.**, Kuo, B., Napadow, V., Sclocco, R. and Mahmoudi, B., 2025. *An Automated Segmentation Pipeline for Quantifying Gastric Motility in Humans Using 4D Cine Magnetic Resonance Imaging* Abstract published in **Gastroenterology**, Elsevier, 2025, Abstract ID: SA2056.

Poster Submissions

- **Yurtseven S.**, Ballester R., *Attending Topological Spaces: Introduction to Cellular Transformers* ↗, MENAML, 2025
- Kara O., **Yurtseven S.**, Yesiltepe H., Stojanov S., Rehg J, *Analysis of Controllability and Fairness in Diffusion Models* ↗, ICVSS, 2023

VOLUNTEER WORK

inzva

AI Team Member

Istanbul, Turkey

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. ↗

Matematik Dunyasi Archive Team

Writer and Editor

Istanbul, Turkey

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 L^AT_EX format. This effort makes historical mathematical content freely accessible on the journal's website, **matematikdunyasi.com** ↗, reaching a broader audience.

WORKSHOPS/INVITED TALKS

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