Sarper Yurtseven

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Personal Statement

My ultimate research goal is to develop explainable, robust and theoretically reliable models and algorithms. I'm passionate about applying AI techniques on different disciplines and problems. My research interests encompass computer vision, geometric deep learning and generative models.

Education

Yildiz Technical University — *Istanbul, Turkey*

BSc in Mathematics — *Sept 2020 - Current*

- **Notable Courses:** Functional Analysis, Group Theory, Ring Theory, Vector Calculus, Differential Geometry, Numerical Methods, Field Theory

Bogazici Okullari — *Istanbul, Turkey*

High School — *Sep 2015 - Jun 2019*

- GPA:97/100, top student of the school

Experience

Princeton University - Supervisor: Dr. Tansu Daylan — *Princeton, NJ*

Researcher at Astromusers — *Sep 2022 - Present*

- Conducting research on how to enhance photometric legacy over space telescopes using deep learning techniques. Particularly, working on **PSF modeling** and **exoplanet detection** using JWST's coronagraphic data.
- Grant proposal is being prepared to be submitted to **NASA**.

Yildiz Technical University - Supervisor: Assoc. Prof. Ozgur Yildirim — *Istanbul, Turkey*

Undergraduate Research Assistant — *July 2022 - Oct 2022*

- Conducted research on deep learning solutions to differential equations. In particular, we worked on **Neural Differential Equations.**

Assia, Inc — *Redwood City, CA*

Data Analyst Intern (Remote) — *Jan 2022 - Mar 2022*

- Worked on smart house data and tried to find meaningful patterns among the users, devices and both. Data analysis tools and some unsupervised methods like K-means clustering and principal component analysis are used. Then I proposed my findings and outputs to my seniors.

Volunteer/Community Work

inzva — *Turkey*

AI Program Specialist — *July 2022 - Present*

- Organizing and coordinating **Google ML Bootcamp 2023 Turkey**. Arranging the syllabus of the program and choosing the lecturers.
- Organized and coordinated **Google ML Bootcamp 2022 Turkey**. I, as an inzva AI team member, provide guidance and mentorship for the participants to gradute from the program succesfully. (**Intern period**)
- I taught about MLPs and their topology and some **model compression** methods. Also, I introduced **Universal Approximation theorem** to understand one of the significant motivations of Deep Learning. **content link**

YTU-SKYLAB — *Turkey*

AI Team Lead — *Feb 2022-Sep 2022*

- Leading the AI team of YTU SKYLAB, we provided educational content and organized workshops for the students wishing to learn about the field. We arranged weekly study groups where papers from top-notch conferences and textbooks are discussed.

TMD (Turkish Mathematics Association) — *Turkey*

Matematik Dunyasi Archive Team, Writer and Editor — *June 2021 - Present*

- Matematik Dunyasi, a journal of popular mathematics, belongs to Turkish Mathematics Association. A group of people including me write the old issues(1991-2001) in LaTeX form to publish on the website for everyone to read them. **matematikdunyasi.com**

Teaching/Workshops

Get Your Hands Dirt in AI — *Idea Kadikoy, Istanbul*

Lecturer — *Oct 2022*

- Variational auto-encoders and contiditonal variational auto-encoders examined theoretically. After that we trained two small models and did image generation.

Morethan101 Workshops — *Zemin Istanbul, Istanbul*

Lecturer — *Sep 2022*

- It was a 3-hour-long lecture. I first introduced MLP's then moved onto auto-encoders. Some motivations behind the derivations of autoencoders like denoising, contractive, variational are given. After that we did live coding. Here is the **repo** and **event website**

inzva Deep Learning Study Group — *Turkey*

Lecturer — *Feb 2022*

- Guidance of 1 week of 12-weeks-long Deep Learning study group. Here is the link for **the content**. **Covered Topics:** Deep vs Shallow Neural Networks, Forward and Backward Propagation algorithms, hyperparameters and hyperparameter tuning methods, Universal Approximation Theorem