

+90 543 831 7253  
Istanbul, Turkey  
a.vanli2019@gmail.com

# Abdullah Vanlıoğlu

[GitHub](#)  
[LinkedIn](#)  
[Personal Webpage](#)

## EDUCATION

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### Istanbul Technical University (MSc)

February 2020 - January 2023

Faculty of Aeronautics and Astronautics Engineering, Defense Technologies

GPA: 3.5/4.0

Focus: Deep Reinforcement Learning

Advisor: Assoc. Prof. Nazım Kemal Üre

### Kocaeli University (BSc)

September 2011 - June 2015

Electrical Engineering

## WORK EXPERIENCE

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### AI Research Engineer

March 2024 - Present

Huawei

- Conducting research and development of AI models for advertising systems

### Graduate Researcher

November 2020 - November 2023

Istanbul Technical University Artificial Intelligence and Data Science Application and Research Center

Supervisor: Assoc. Prof. Nazım Kemal Üre

- My research primarily focuses on developing **Multi-Agent Deep Reinforcement Learning (MARL)** methods to tackle social dilemmas, wherein the selfish interests of agents conflict with the collective interests of the group. I have developed incentive mechanisms that modify the system's reward setup using **Meta-gradient** and **Offline RL** to align agents' self-interested policies with the cooperative policy. In addition to my work in MARL, I have explored various areas of interest including **Sequence Modeling (transformers)**, and **Generative Models (GAN and Diffusion Models)**. These explorations were aimed at effectively addressing RL systems' generalization and adaptation challenges.

### AI Engineer

January 2020 - November 2020

Pixselect Technology

- Worked on object detection and tracking algorithms

### Electric Motor Design Engineer

November 2015 - January 2019

Femsan Electric Motors

- Designed many different type of electric motors and alternators

## PUBLICATIONS

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\* Equal Contribution

- Guresti, B., Vanlıoğlu, A., Üre, Nazım Kemal,. 2023. IQ-Flow: Mechanism Design for Inducing Cooperative Behavior to Self-Interested Agents in Sequential Social Dilemmas. In Proc. of the 22nd International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2023), London, United Kingdom, May 29 – June 2, 2023, IFAAMAS, 17 pages.

- Guresti, B.\*, Vanlioglu, A.\*, Ure, Nazim Kemal, "Empirical Robustness Analysis of Learning to Incentivize Other Self-Interested Agents", in Proceedings of the Conference of Computational Science and Computational Intelligence (CSCI), 2022.

## SKILLS

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|----------------------|---------------------------|
| <b>Programming</b>   | Python, C, C++, Matlab    |
| <b>Frameworks</b>    | Pytorch, JAX, Tensorflow  |
| <b>Communication</b> | Turkish (native), English |