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Abdullah Vanlıoğlu

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Education

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

AI Research Engineer **March 2024 - Present**
Huawei

- 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 such as **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

* Equal Contribution

- Guresti, B., Vanlioglu, A., Ure, Nazim 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

Programming	Python, C, C++, Matlab
Frameworks	Pytorch, JAX, Tensorflow
Communication	Turkish (native), English