Bengisu Güresti

Curriculum Vitae

✉ bengisuguresti0@gmail.com
🌐 bengisug.github.io

TECHNICAL SKILLS

○ Python, PyTorch, Jax, Flax, Pandas, CVXPY, C, C++, Java, MATLAB, Pandas, LaTeX, VHDL, Verilog

○ Deep Learning, Deep Reinforcement Learning, Multi-agent Systems, Game Theory

EDUCATION

September 2023 –	**Computer Science (PhD)**, *Washington University in St. Louis*, St. Louis, USA. GPA: 3.93/4.0 Advisor: Prof. Yevgeniy Vorobeychik
February 2020 – January 2023	**Computer Engineering (MSc)**, *Istanbul Technical University*, Istanbul, TURKEY. MSc Thesis: IQ-Flow: Mechanism Design for Inducing Cooperative Behavior to Self-Interested Agents in Sequential Social Dilemmas GPA: 3.88/4.0 Advisor: Assoc. Prof. Nazim Kemal Ure
September 2016 – October 2020	**Electronics and Communication Engineering (BSc, Double Major)**, *Istanbul Technical University*, Istanbul, TURKEY. GPA: 3.62/4.0 Bachelor Thesis: Hardware Implementation of Artificial Neural Networks, Advisor: Assoc. Prof. Mustafa Altun
September 2015 – January 2020	**Computer Engineering (BSc)**, *Istanbul Technical University*, Istanbul, TURKEY. GPA: 3.72/4.0 Bachelor Thesis: Robotic Manipulation with Deep Reinforcement Learning, Advisor: Assoc. Prof. Sanem Sariel
August 2018 – February 2019	**Communication Systems (Erasmus Program)**, *École Polytechnique Fédérale de Lausanne*, Lausanne, SWITZERLAND.
September 2010 – June 2015	**Kabatas Erkek Lisesi (Anatolian High School)**, *Concentration: Math-Science*, Istanbul, TURKEY. Primary foreign language: German

AWARDS & SCHOLARSHIPS

○ **DeepMind Scholar** at Istanbul Technical University Computer Engineering MSc program

○ Selected as Principal Nominee for **Fulbright PhD Scholarship** for 2020-2021 academic year

○ **Prime Ministry Scholarship** (for the rank of first 100 – 7th in DIL-2 – in LYS 2016, i.e. Turkish Undergraduate Placement Examination)

○ Is Bankasi **Golden Youth Prize**

RESEARCH EXPERIENCE

September 2023 -

Graduate Researcher, *Washington University in St. Louis*, CERL Lab, Prof. Yevgeniy Vorobeychik.
Mechanism Design for Multi-Agent Reinforcement Learning

April 2020 - May 2023

Graduate Researcher, *Istanbul Technical University*, Artificial Intelligence and Data Science Research Center, Assoc. Prof. Nazim Kemal Ure.
IQ-Flow: Mechanism Design for Inducing Cooperative Behavior to Self-Interested Agents in Sequential Social Dilemmas (MSc Thesis. Accepted to the 22nd International Conference on Autonomous Agents and Multiagent Systems - AAMAS 2023)
Investigating robustness of agent incentivization methods LIO in Sequential Social Dilemmas with meta-gradients. (Paper Title: Empirical Robustness Analysis of Learning to Incentivize Other Self-Interested Agents. Accepted to ICAI'22, to be published)
Investigating transfer capability of centralized training decentralized execution paradigm across variable number of agents. (Paper Title: Evaluating Generalization and Transfer Capacity of Multi-Agent Reinforcement Learning Across Variable Number of Agents)
Deep Reinforcement Learning methods on increasing collaboration in multi-agent systems by learning sparse interaction graphs using self attention mechanism and graph networks for more efficient communication and collaboration.

June 2019 - March 2020

Undergraduate Researcher, *Istanbul Technical University*, Artificial Intelligence and Robotics Laboratory, Assoc. Prof. Sanem Sariel.
Implementation of Soft Actor Critic (SAC), Training Baxter robot arm using Pybullet Simulation Environment to reach a target point, push an object and grasp an object with DDPG, SAC and Hindsight Experience Replay

April 2018 - June 2018

TUBITAK Project Undergraduate Student Scholar, *Istanbul Technical University*, Artificial Intelligence and Robotics Laboratory, Assoc. Prof. Sanem Sariel.
Work on Violet (Visual Interpreter and Modeller for Objects and Relations), programming of some relations between objects, Implementation of Kalman filter for vision tracking

UNDER REVIEW CONFERENCE PAPERS

- Guresti, B., Zhang, C., Vorobeychik, Y. (2025). Learning Recommender Mechanisms for Bayesian Stochastic Games.

PEER-REVIEWED CONFERENCE PAPERS

- **Ge, L.**, Lanier, M., Sarkar, A., Guresti, B., Vorobeychik, Y., Zhang, C. (2025). Learning Policy Committees for Effective Personalization in MDPs with Diverse Tasks. ICML 2025

- **Guresti, B.**, Vanlioglu, A., Ure, N. K. (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.

PEER-REVIEWED WORKSHOP PAPERS - PRESENTATIONS

- **Guresti, B.**, Ure, N. K., (2021). Evaluating Generalization and Transfer Capacity of Multi-Agent Reinforcement Learning Across Variable Number of Agents. Presented in AAAI Spring Symposium on Challenges and Opportunities for Multi-Agent Reinforcement Learning (COMARL)

WORK EXPERIENCE

December 2021 – August 2023
Research and Teaching Assistant, *Istanbul Technical University*, Istanbul, TURKEY.

July 2018 – August 2018
Digital Design and Signal Processing Intern, *ASELSAN*, Ankara, TURKEY.
Component design of an NTSC video encoder using VHDL
Intensity control of a LED using PWM on a Zc706 Evaluation Kit with VHDL

June 2018–July 2018
Software Engineering Intern, *SIEMENS*, Istanbul, TURKEY.
Large customer data file generation for performance test of Spectrum Power 7 by shell scripting
Implementation of automated test using Selenium WebDriver

LANGUAGES

- Turkish: Native
- English: C1
- German: C1
- French: A2/B1

CERTIFICATIONS & TEST SCORES

TOEFL IBT Home Edition
Score: 105, *Istanbul, TURKEY*, August 2021.

GRE General
Verbal Reasoning: 157, Quantitative Reasoning: 166, Analytical Writing: 4.0, *Istanbul, TURKEY*, October 2019.

DSD-II Deutsches Sprachdiplom
C1, *Istanbul, TURKEY*, May 2015.