Stelios Stavroulakis

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Summary

Leveraging data to make intelligent decisions. Specialized in reinforcement learning theory and applications, combinatorial optimization and algorithms. Research interests revolve around multi-agent reinforcement learning and game theory. US citizen.

Technical Strengths

ML Frameworks: PyTorch, Keras, TensorFlow, Sci-Kit Learn, OpenCV
RL Frameworks: RLlib, PettingZoo, OpenSpiel, Gym
Programming: Python, Julia, GCP, Docker, Git, Unity3D, MATLAB, C, Java
Skills: Reinforcement Learning, Optimization, Algorithms, Game Theory, Probability & Statistics, Neural Networks (GNNs, RNNs), Linear Regression/Classification, SVMs, K-Means, PCA

Education

PhD in Computer Science   September 2021 - Present
University of California, Irvine,Irvine, CA, USA

Research: Multi-Agent Reinforcement Learning
Courses: Reinforcement Learning, Optimization, Machine Learning
Advisor: Ioannis Panageas

MS in Computer Engineering   September 2019 - June 2022
University of California, Irvine, Irvine, CA, USA

Research: Privacy-Preserving Reinforcement Learning
Courses: Algorithms, Network Science, High-Performance Computing
Thesis: Computing Nash Equilibria in Adversarial Stochastic Team Games

Master of Engineering in Electrical Engineering and Computer Science   June 2019
National Technical University of Athens, Athens, Greece

Major: Computer Systems - Electronics, Circuits, Materials,
Minor: Electromagnetic Waves and Telecommunication, Bioengineering
Thesis: Deep Reinforcement Learning methods to solve the Rubik's Cube

Work Experience

Machine Learning Researcher   June 2023
Microsoft Research, New York, NY, USA

Conducting research on the application of transformers for feature generation used in sequential decision making problems.

Machine Learning Engineer   June 2023 - Sept 2023
Qualcomm AI, San Diego, CA, USA

Studing new ML-augmented approaches to combinatorial optimization. Techniques include large-scale deep learning, graph neural nets, reinforcement learning, self-supervision, optimization solvers.

Machine Learning Engineer   June 2022 - Oct 2022
Zebra Technologies, Lincolnshire, IL, USA

Design and implementation of multi-agent RL with size/permutation-invariant inputs. Responsibilities include environment design, reward shaping, and implementation of techniques to circumvent combinatorial action spaces.

Data Science and Reinforcement Learning Intern June 2021 - Oct 2021
Zebra Technologies, Lincolnshire, IL, USA

Created custom multi-agent OpenAI Gym environments and algorithms for Orchestration as a Service (OaaS) solutions, allowing the Core ML department to formulate computationally intractable problems in an efficient and decentralized manner. Won the internal annual innovation award competition out of 150 interns for proposing and prototyping a pathfinding application for Zebra's market expansion.

Research Intern - Software Engineer
Pacific Northwest National Laboratory, Richland, WA, USA
June 2020 - August 2021

Reduced the action space of a power-grid RL controller by an order of magnitude to augment the development of deep reinforcement learning-based real-time emergency control algorithms.

Software Engineering Intern
RedLink, Santa Clara, CA, USA
June 2015 - August 2015

Designed syntactic/word-sense disambiguation algorithms in Java, resulting in the RedLink Network database.

Publications

Reinforcement Learning for Location-Aware Scheduling
S. Stavroulakis and B. Sengupta
Generalizable Policy Learning in the Physical World workshop **ICLR 2022**.

adaPARL: Adaptive Privacy-Aware Reinforcement Learning for
Human-in-the-Loop Systems
M. Taherisadr, S. Stavroulakis and S. Elmalaki
8th ACM/IEEE Conference on Internet of Things Design and Implementation **IoTDI 2023**

On the Pointwise Convergence and Equilibrium Selection of
No-Regret Learning Dynamics
I. Sakos, S. Leonardos, W. Overman, S. Stavroulakis, I. Panageas and G. Piliouras - (under review)

On Scrambling Phenomena for Randomly Initialized Recurrent Networks
V. Chatziafratis, I. Panageas, C. Sanford and S. Stavroulakis - **NeurIPS 2022**

Efficiently Computing Nash equilibria in Adversarial Stochastic Team Games
F. Kalogiannis, I. Anagnostides, I. Panageas, S. Stavroulakis,
E.V. Vlatakis, V. Chatziafratis **ICLR 2023 - Oral Talk (top 5%)**

Teaching Experience

Teaching Assistant, CS 161 Design and Analysis of Algorithms, Spring 2023.
Teaching Assistant, CS 161 Design and Analysis of Algorithms, Winter 2023.
Teaching Assistant, CS 268P Optimization Modeling, Fall 2022.
Teaching Assistant, CS 161 Design and Analysis of Algorithms, Spring 2022.

Awards and Scholarships

2023 Microsoft Reinforcement Learning Open-Source Fest Fellow
2022–2025 Summer Program Participant Fellowship, UCI
2022 Gerondelis Fellowship
2019–2020 Computer Engineering Fellowship, UCI
2017 4th place, IEEE Signal Processing Cup 2017: Real-Time Beat Tracking Challenge

Other Interests

Drone Photographer, Lifeguard, Salsa Instructor, Footvolley Athlete