

Argyrios Gerogiannis

✉ ag91@illinois.edu | 📧 Grimoid | 🔗 argyrger | 🎓 Argyrios Gerogiannis

Research Interests

- **Reinforcement Learning:** Inverse, Partially Observable and Non-Stationary Reinforcement Learning.
- **Bandit Algorithms:** Non-Stationary Parametric and Non-Parametric Bandits.
- **Machine Learning:** Generative Modeling, Deep Learning for Reinforcement Learning Applications.

Education

University of Illinois at Urbana-Champaign (UIUC)

Urbana-Champaign, Illinois, USA

PhD in Electrical and Computer Engineering (ECE)

Aug. 2022 - Present

- **Cumulative GPA: 4.00/4.00**
- **Advisor: Venugopal V. Veeravalli** 🎓

University of Patras (UoP)

Patras, Greece

Diploma (BSc+MEng) in Electrical and Computer Engineering (ECE)

Sep. 2017 - Aug. 2022

- **Cumulative GPA: 9.69/10.00** (first of my class; top 10 in the department's history)
- **Advisor: George Moustakides** 🎓
- **Thesis: Inverse Reinforcement Learning** 📖

Relevant Coursework

- **At UIUC:** MDPs & Reinforcement Learning, Statistical Inference for Engineers & Data Scientists, Random Processes, Statistical Learning Theory, Introduction to Optimization, Information Theory
- **At UoP:** Machine Learning, Pattern Recognition, Artificial Intelligence, Digital Processing & Image Analysis, Computer Graphics & Virtual Reality, Linear & Combinatorial Optimization

Project Experience

Non-Stationary Reinforcement Learning (NS-RL)

2023-Present

- Identified practical feasibility gaps in black-box NS-RL, formulated an open problem to enhance real-world applicability.
- Engineered the first practical state-of-the-art black-box algorithm for parametric non-stationary bandits.
- Proposed non-stationarity models tailored to practical scenarios and developed new NS-RL algorithms.
- Designed modular algorithms for non-stationary multi-armed bandits, promoting reusability and adaptability.

Partially Observable Reinforcement Learning

2022-Present

- Developed the first model-free reinforcement learning solution for target tracking in a Partially Observable Markov Decision Process (POMDP) framework, addressing controlled sensing challenges.
- Deployed tractable algorithms, improving tracking accuracy by over 5% compared to conventional methods, demonstrating practical applicability and real-world impact.

Publications & Submissions

Detection Is All You Need: A Feasible Optimal Prior-Free Black-Box Approach For Piecewise Stationary Bandits 📖

UIUC, USA

Under review at International Conference on Machine Learning (ICML), 2025

2025

- **Argyrios Gerogiannis**, Yu-Han Huang, Subhonmesh Bose, Venugopal V. Veeravalli

Change Detection-Based Procedures for Piecewise Stationary MABs: A Modular Approach 📖

UIUC, USA

Under review at Journal of Machine Learning Research (JMLR)

2024

- Yu-Han Huang, **Argyrios Gerogiannis**, Subhonmesh Bose, Venugopal V. Veeravalli

Is Prior-Free Black-Box Non-Stationary Reinforcement Learning Feasible?

UIUC, USA

(Accept) International Conference on Artificial Intelligence and Statistics (AISTATS), 2025

2024

- Argyrios Gerogiannis, Yu-Han Huang, Venugopal V. Veeravalli

Track-MDP: Reinforcement Learning for Target Tracking with Controlled Sensing

UIUC, USA

(Accept) IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2025

2024

- Adarsh M. Subramaniam, Argyrios Gerogiannis, James Z. Hare, Venugopal V. Veeravalli

Track-MDP: Reinforcement Learning for Target Tracking with Controlled Sensing (Extended Version)

UIUC, USA

Under review at IEEE Transactions on Signal Processing

2024

- Adarsh M. Subramaniam, Argyrios Gerogiannis, James Z. Hare, Venugopal V. Veeravalli

Work Experience

Graduate Research Assistant

Urbana-Champaign, Illinois, USA

University of Illinois at Urbana-Champaign

Aug. 2022 - present

- Graduate Research Assistant for the VVW Group of the Coordinated Science Laboratory.

Teaching Experience

Teaching Assistant

Urbana-Champaign, Illinois, USA

University of Illinois at Urbana-Champaign

Aug. 2023 - Dec. 2023

- Teaching Assistant for ECE 598 - Data Driven Techniques

Private Tutor

Patras, Greece

Freelancer

Dec. 2017 - Jul. 2020

- Gave lectures and tutored high school students in preparation for the national exams. Taught courses in Mathematics, Physics, Chemistry and Algorithms & Data Structures.

Honors & Awards

Dilip and Sandhya Sarwate Graduate Fellowship

2022-2023

Awarded to outstanding incoming graduate students in the area of communications.

UIUC, USA

University Student Excellence Award

2022-2023

Awarded to the student with the highest GPA among all 2021-2022 graduates of the ECE department.

UoP, Greece

Student Excellence Award

2022-2023

Awarded to the student with the highest GPA among all 2021-2022 graduates of each department.

State Scholarships Foundation, Greece

Excellence Award

2011-2017

Awarded to high school students who demonstrate excellent performance in their studies.

Ministry of Education and Religious Affairs, Greece

Services

- Reviewer** IEEE International Symposium on Information Theory - ISIT 2024, ISIT 2025
- Conferences** Optimization, Control and Reinforcement Learning Session Chair - CSLSC 2024

Skills

- Programming Languages** Python, C++, MATLAB
- Frameworks** PyTorch, TensorFlow, Keras, Pandas, scikit-learn
- Languages** Greek (native), English (fluent)