Christos N. Mavridis

✆ (+1) 301·405·3374 · https://mavridischristos.github.io/ · ✉ mavridis@umd.edu

2239 A.V. Williams Building, University of Maryland, College Park, MD 20742, USA

Ph.D. Candidate, ECE, UMD

· Research Interests: Machine Learning Theory, Optimization, Systems and Control Theory, Robotics.

EDUCATION

University of Maryland, College Park — August 2017 - Present
Ph.D., Electrical and Computer Engineering — *Advisor: Prof. John S. Baras*

· Coursework: Systems theory (J. Baras), Random Processes in Communication and Control (A. Makowski), Statistical Pattern Recognition (R. Chellappa), Optimal Control (A. Tits), Nonlinear Control (E. Abed), Convex Optimization (R. La), Formal Methods for Cyber-Physical Systems (J. Baras), AI Planning (D. Nau), Adaptive Control and Learning Theory (P. S. Krishnaprasad), Stochastic Optimization (I. Ryzhov).

National Technical University of Athens, Greece — 2017
Diploma (5 years) in Electrical and Computer Engineering — *Advisor: Prof. Kostas J. Kyriakopoulos*

· Majors: Signal Processing, Control Theory, Statistical Pattern Recognition, Computer Vision, Robotics.
· Diploma Thesis: EEG Signals in Neuro-Robotics.

RESEARCH EXPERIENCE

Institute for Systems Research & ARC Lab — August 2017 - Present
Graduate Research Assistant — *University of Maryland, College Park, MD*

· Research Focus: Machine Learning Theory, Optimization, Systems and Control Theory, Robotics.
· Research Advisor: John S. Baras, Distinguished University Professor and Chair in Systems Engineering.

System Sciences Lab, Palo Alto Research Center (PARC) — May 2019 - August 2019
Research Intern — *Palo Alto, CA*

· Research Focus: Control of Networked Systems, Mean-field Game Theory.
· Supervisors: Ion Matei and Johan de Kleer.

Math & Algorithms Research Group, Nokia Bell Labs — June 2018 - August 2018
Research Intern — *Murray Hill, NJ*

· Research Focus: Information Theory for Feature Extraction and Machine Learning Applications.
· Supervisor: Iraj Saniee, Head, Math & Algorithms Research Group.

Control Systems Lab — August 2015 - June 2017
Undergraduate Research Assistant — *Mechanical Eng. Dept., NTUA, Athens, Greece*

· Research Focus: System Identification, Machine Learning, Adaptive Control, Human-Robot Collaboration, EEG & EMG Signal Processing, Brain-Robot Interfaces, Robot Control.
· Advisor: Kostas J. Kyriakopoulos, Professor of Robotics, Mechatronics and Control.

TEACHING EXPERIENCE

Dept. of Electrical and Computer Engineering — Fall 2020, Spring 2021
Graduate Teaching Assistant — *University of Maryland, College Park, MD*

· Spring 2021: ENEE 436 (Foundations of Machine Learning), Professor: Behtash Babadi.
· Fall 2020: ENEE 660 (Systems Theory), Professor: John S. Baras.

Dept. of Electrical and Computer Engineering — Spring 2018, Spring 2020, Fall 2020
Guest Lecturer — *University of Maryland, College Park, MD*

· ENEE660 (Systems Theory), ENSE622 (System Trade-off Analysis, Modeling, and Simulation).

PUBLICATIONS

Peer-Reviewed Conference & Journal Papers

- ***Christos N. Mavridis***, *John S. Baras, Vector Quantization for Adaptive State Aggregation in Reinforcement Learning, 2021 American Control Conference.*
- ***Christos N. Mavridis***, *Amoolya Tirumalai, John S. Baras, Learning Swarm Interaction Dynamics from Density Evolution, IEEE Transactions on Control of Network Systems [under review].*
- ***Christos N. Mavridis***, *John S. Baras, Online Deterministic Annealing for Classification and Clustering, ArXiv.*
- ***Christos N. Mavridis***, *Nilesh Suriyarachchi, John S. Baras, Detection of Dynamically Changing Leaders in Complex Swarms from Observed Dynamic Data, Conference on Decision and Game Theory for Security (GameSec), 2020.*
- ***Christos N. Mavridis***, *Amoolya Tirumalai, John S. Baras, Learning Interaction Dynamics from Particle Trajectories and Density Evolution, Conference on Decision and Control (CDC), 2020.*
- ***Christos N. Mavridis***, *Amoolya Tirumalai, John S. Baras, Ion Matei, Semi-linear Poisson-mediated Flocking in a Cucker-Smale Model, International Symposium on Mathematical Theory of Networks and Systems (MTNS), 2020.*
- ***Christos Mavridis***, *John Baras, Kostas Kyriakopoulos, A Human-Robot Interface based on Surface Electroencephalographic Sensors, International Conference on Intelligent Robots and Systems (IROS), 2020.*
- ***Christos N. Mavridis***, *John S. Baras, Convergence of Stochastic Vector Quantization and Learning Vector Quantization with Bregman Divergences, IFAC World Congress, 2020.*
- ***Christos N. Mavridis***, *Constantinos Vrohidis, John S. Baras, Kostas J. Kyriakopoulos, Robot Navigation Under MITL Constraints Using Time-Dependent Vector Field Based Control, Conference on Decision and Control (CDC), 2019.*
- *Ion Matei,* ***Christos N. Mavridis***, *John S. Baras, Maksym Zhenirovskyy, Inferring Particle Interaction Physical Models and Their Dynamical Properties, Conference on Decision and Control (CDC), 2019.*
- ***Christos N. Mavridis***, *Konstantinos Alevizos, Charalampos P. Bechlioulis, Kostas J. Kyriakopoulos, Human-robot collaboration based on robust motion intention estimation with prescribed performance, European Control Conference (ECC), 2018.*

HONORS & AWARDS

- Fellow, Future Faculty Program, A. James Clark School of Engineering, UMD (2021).
- Graduate School's Outstanding Research Assistant Award, A. James Clark School of Engineering, UMD (2020-21).
- Scholarship, Gerontelis Foundation, MA (2018).
- Finalist, Qualcomm Innovation Fellowship US, San Diego, CA (2018).
- Distinguished Graduate Fellowship, A. James Clark School of Engineering, UMD (2017).
- Student excellence award, 'Great Moment for Education Award', EFG Eurobank, Greece (2010).

VOLUNTARY ACTIVITIES

- Scholarly peer reviewer: CDC, ACC, ECC, ABB, ICRA, IROS.
- Member of the ECE Graduate Student Association Board, UMD.

SOFTWARE SKILLS

Languages	Python, C, C++, Bash (Unix Shell), Java, HTML/CSS, Matlab.
Tools	PyTorch, ROS/Gazebo, Wolfram Mathematica, Gurobi Optimizer, Latex, Git.

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Last updated: 01/2021