

Spilios Evmorfos

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EDUCATION

Rutgers, The State University of New Jersey Fall 2020 - December 2024

Ph.D. in Electrical and Computer Engineering (GPA: 4.00/4.00)

Advisor: Athina P. Petropulu 

Research Areas:

- Improving Value function approximation for Vision-based Reinforcement Learning
- Deep Reinforcement Learning for Wireless Autonomy
- Machine Learning for Inverse Problems in Signal Processing

National Technical University of Athens (NTUA)

Fall 2018 - Spring 2019

Masters in Business Administration (MBA)

Specialization: Deep Learning for Time Series Prediction with Application in Finance

National Technical University of Athens (NTUA)

Fall 2012 - Spring 2018

BSc and MSc in Electrical and Computer Engineering

GPA: 8.32/10 (top 10%)

Specialization: Computer Science (Major), Signal Processing/Control (Minor)

Thesis: Deep Learning for Time Series Prediction with Application in IoT security

Doukas Lyceum

Fall 2009 - Spring 2012

National University Entrance Examination score: 19.704/20.000 (top 1% nationwide)

PROFESSIONAL EXPERIENCE

SIEMENS

Summer 2022

Autonomous Systems and Control Group, Princeton, NJ, USA

Research Science Intern

- Developed Unsupervised Pretraining Methods for Vision-based Reinforcement Learning
- Benchmarked the developed methods on the DeepMind Control Suite using PyTorch and JAX
- Paper submitted to ICLR

RUTGERS UNIVERSITY

Fall 2020 - Present

Graduate Student Researcher

- Improving Deep Q Learning using the Neural Tangent Kernel of the Critic
- Correlated Multi-Armed Bandits for Sensor selection in Wireless Systems
- Deep Reinforcement Learning for Motion Control in Relay Networks
- Deep Reinforcement Learning for IRS Phase Shift Design in Wireless Systems
- Deep Generative Modelling for Inverse Problems in Signal Processing

RUTGERS UNIVERSITY

Spring 2021

Teaching Assistant

Digital Signal Processing Course

- Taught the weekly Lab Sessions to 110 students
- Graded the biweekly programming assignments (MATLAB)

Institute of Communication and Computer Systems (ICCS) Spring 2017 - Spring 2019

Junior Researcher - Machine Learning

- Recurrent Neural Networks for SYN TCP attack detection
- Implementation of Generative Adversarial Networks for Image Dataset Augmentation
- Part of the Implementation Team for a 4K Streaming application over 5G
- Developed Natural Language Processing models for sentiment analysis of Twitter tweets on autonomous driving using PyTorch

PUBLICATIONS

- [1] *Unsupervised Pretraining for Neural Value Approximation*
S. Evmorfos, S. Gumussoy
International Conference on Learning Representations (ICLR), 2023 (submitted)
- [2] *On the Design of Actor-Critic Methods for IRS Phase Shift Design in Spatiotemporally Correlated Channel Environments: A Closer Look into The Neural Tangent Kernel of The Critic*
S. Evmorfos, A.P. Petropulu, H.V. Poor
Transactions on Signal Processing (TSP), 2023 (under preparation)
- [3] *Deep Reinforcement Learning for IRS Phase Shift in Spatiotemporally Correlated Environments*
S. Evmorfos, A.P. Petropulu, H.V. Poor
International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2023 (submitted)
- [4] *Deep Actor-Critic for Continuous 3D Motion Control in Mobile Relay Beamforming Networks*
S. Evmorfos, A.P. Petropulu
International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2022
- [5] *Adaptive Discrete Motion Control for Mobile Relay Networks*
A.P. Petropulu, S. Evmorfos, D.S. Kalogerias
Frontiers in Signal Processing, 2022
- [6] *Reinforcement Learning for Motion Policies in Mobile Relaying Networks*
S. Evmorfos, K. Diamantaras, A.P. Petropulu
Transactions on Signal Processing (TSP), 2022
- [7] *Double Deep Q Learning with Gradient Biasing for Mobile Relay Beamforming Networks*
S. Evmorfos, K. Diamantaras, A.P. Petropulu
Asilomar Conference on Signals, Systems and Computers, 2021
- [8] *Deep Q Learning with Fourier Feature Mapping for Mobile Relay Beamforming Networks*
S. Evmorfos, K. Diamantaras, A.P. Petropulu
International Workshop on Signal Processing Advances in Wireless Communications (SPAWC), 2021
- [9] *Neural Network Architectures for the Detection of SYN Flood Attacks in IoT Systems*
S. Evmorfos, G. Vlachodimitropoulos, N. Bakalos, E. Gelenbe

HONORS AND AWARDS

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| <u>Gerondelis Graduate Student Fellowship Award</u> Fellowship for PhD students in US Institutions | 2021 |
| <u>European Union Innovation Radar</u> Proposed algorithm for SYN Flood attack detection was recognized as one of the key innovations for IoT Security | 2020 |
| <u>Papakyriakopoulos Award</u> Award for Excellence in Mathematics Courses (NTUA) | 2015 |
| <u>Papakyriakopoulos Award</u> Award for Excellence in Mathematics Courses (NTUA) | 2014 |
| <u>The Great Moment of Education Award</u> Eurobank Fellowship for graduating first in High School in Nationwide University Entrance Examination | 2012 |

COMPUTER SKILLS

Deep Learning Frameworks: PyTorch, JAX, TensorFlow
Programming Languages: Python, C/C++, MATLAB, Simulink, bash
Tools and Platforms: GNU/Linux, MacOS, Windows, Git, Latex

LANGUAGES

Greek: Native
English: Excellent (C2)
French: Intermediate (B2)