Panagiotis Theodoropoulos

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Research Interests

Deep generative models, (Entropic) Optimal Transport, Dynamic Transport maps, Dynamical Systems, Differential Equations, Schrodinger Bridge, Stochastic Optimal Control, Robust Optimal Control, Scalable higher-order optimization, Dynamic Programming, Hamilton-Jacobi Bellman principle.

Education

Georgia Institute of Technology, Atlanta, GA
PhD in Machine Learning (GPA: 3.86/4.00) 2022–
Advisor: Dr. Evangelos Theodorou

University of Patras, Patras, Greece
B.S. in Mechanical Engineering (GPA: 9.00/10.00, Ranked 1st in Class of 2021) 2016-2021
Advisor: Dr. Spilios Fassois

Research Experience

Prisma Electronics, Athens, Greece
Research Engineer (Supervisor: Christos Spandonidis) 10/2020–06/2022

Prisma Electronics, Athens, Greece
Research Intern (Supervisor: Christos Spandonidis) Summer of 2020

Stochastic Mechanical Systems & Automation, Patras, Greece
Undergraduate Research Associate (Supervisor: Fassois Spilios) 09/2019 - 07/2021

Atlas Aviation Group, Patras, Greece
Undergraduate Research Associate (Supervisor: Vassilis Kostopoulos) 02/2018 - 03/2020

Publications

(*Equal Contribution,†Equal Advising)

Preprints

[P1] **Theodoropoulos, P.**, Saravanos, A. D., Theodorou, E. A.†, & Liu, G.-H.†
Momentum Multi-Marginal Schrödinger Bridge Matching.
arXiv preprint arXiv:2506.10168 (2025) [Under Review]. https://arxiv.org/abs/2506.10168

Conferences

[C1] **Theodoropoulos, P.**, Komianos, N., Pacelli, V., Liu, G.-H., & Theodorou, E. A.
Feedback Schrödinger Bridge Matching.
International Conference on Learning Representations (ICLR) 2025. [Oral, 1.0%]

[C2] **Theodoropoulos, P.**, Liu, G.-H., Chen, T., Saravanos, A. D., & Theodorou, E. A.
A Robust Differential Neural ODE Optimizer.
International Conference on Learning Representations (ICLR) 2024.

[C3] **Theodoropoulos, P.**, Spandonidis, C., Giordamlis, C. & Fassois, S.
Stability and Safety of Ships and Ocean Vehicles: Enhancing vessel's operational safety using Convolutional Neural Networks and Big Data techniques.
International Conference on the Stability and Safety of Ships and Ocean Vehicles (STAB&S) (2021)

[C4] **Theodoropoulos, P.**, Spandonidis, C., Giordamlis, C.
Combined multi-layered big data and responsible AI techniques for enhanced decision support in Shipping.
International Conference on Decision Aid Sciences and Application (DASA) (2020)

Journals

[J1] **Theodoropoulos, P.**, Spandonidis, C. C., Themelis, N., Giordamlis, C. & Fassois, S.
Evaluation of Different Deep-Learning Models for the Prediction of a Ship's Propulsion Power.
Journal of Marine Science and Engineering, (2021).

[J2] **Theodoropoulos, P.,** Spandonidis, C. C., Giannopoulos, F. & Fassois, S.
A deep learning-based fault detection model for optimization of shipping operations and enhancement of maritime safety. *Sensors (2022).*

[J3] **Theodoropoulos, P.**, Spandonidis, C. C., & Fassois, S.
Use of Convolutional Neural Networks for vessel performance optimization and safety enhancement. *Ocean Engineering, (2022).*

[J4] **Theodoropoulos, P.***, Spandonidis, C. C.*, Giannopoulos, F., Galiatsatos, N. & Petsa, A.
Evaluation of deep learning approaches for oil & gas pipeline leak detection using wireless sensor networks. *Engineering Applications of Artificial Intelligence, (2022).*

[J5] Spandonidis, C., Giannopoulos, F., Sedikos, E., Reppas, D. & **Theodoropoulos, P.**
Development of a MEMS-based IoV system for augmenting road traffic survey.
IEEE Transactions on Instrumentation and Measurement, (2022).

Workshops

[W1] **Theodoropoulos, P**., Liu, G.-H., Chen, T. & Theodorou, E.
Game Theoretic Neural ODE Optimizer.
In ICML Workshop on New Frontiers in Learning, Control, and Dynamical Systems (2023).

Honors & Awards

- Awarded by 'Techniko Epimelitirio Elladas - TEE' for graduating first in undergraduate studies
- Gerontelis Foundation Doctoral Scholar
- Salutatorian, Graduating Class of 2021, Department of Mechanical Engineering, University of Patras
- Eurobank scholar during undergraduate studies
- Eleytherios Venizelos scholar during undergraduate studies

Peer Review Service

Conferences:

- International Conference on Machine Learning (ICML)
- International Conference on Learning Representations (ICLR)

Journals:

- Engineering Applications of Artificial Intelligence
- Ocean Engineering
- Sensors
- International Journal of Maritime Engineering

Teaching Experience

Head Teaching Assistant, Georgia Institute of Technology Spring 2025
COE 2001: Statics
- Led weekly recitations for 50+ students
- Assisted in course coordination, homework grading rubric preparation, and grading.

Skills

Programming: Python, Matlab, C/C++
Packages: Pytorch, Tensorflow, CVXPY