Yorgos Felekis

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Education

Doctor of Philosophy (Ph.D.), Machine Learning — Oct. 2022 – present
University of Warwick — *Coventry, UK*

- Area: Causality, Causal Representation Learning, Digital Twins
- Advisor: Prof. Theodoros Damoulas
- Member of the Warwick Machine Learning Group
- Enrichment student at the Alan Turing Institute (*Oct. 2024 – Jun. 2025*)
- Research internship at Spotify, London, UK (*Jun. 2025 – Aug. 2025*)

Master of Science (M.Sc.), Machine Learning — Sep. 2019 – Sep. 2020
University College London - UCL — *London, UK*

- Degree awarded with Distinction
- Thesis: "Generalised Variational Inference posteriors in Probabilistic Deep Learning" (Distinction)
- Area: Probabilistic Machine Learning, Bayesian Inference
- Advisors: Prof. Theodoros Damoulas and Prof. Brooks Paige

Bachelor of Science (B.Sc.), Mathematics — Oct. 2014 – Jul. 2019
National and Kapodistrian University of Athens — *Athens, GR*

- Degree awarded with First Class Honours
- Specialization Area: Applied and Computational Mathematics

Publications

Causal Abstraction Learning based on the Semantic Embedding Principle 2025

- D'Acunto G., Zennaro F.M., **Felekis Y.**, , Di Lorenzo P., *International Conference on Machine Learning (ICML), 2025*

Causal Optimal Transport of Abstractions 2024

- **Felekis Y.**, Zennaro F.M., Branchini N., Damoulas T., *Causal Learning and Reasoning (CLeaR), 2024*

Interventionally Consistent Surrogates for Agent-based Simulators 2024

- Dyer J., Bishop N., **Felekis Y.**, Zennaro F.M., Calinescu A., Damoulas T., Wooldridge M., *Neural Information Processing Systems (NeurIPS), 2024*

Causally Abstracted Multi-armed Bandits 2024

- Zennaro F.M., Bishop N., Dyer J., **Felekis Y.**, Calinescu A., Wooldridge M., Damoulas T., *Uncertainty in Artificial Intelligence (UAI), 2024*

Probabilistic Deep Learning with Generalised Variational Inference 2022

- **Felekis Y.**, Damoulas T., Paige B., *4th Symposium on Advances in Approximate Bayesian Inference (AABI), 2022*

The generalized λ-Constant Function Market Makers 2022

- **Felekis Y.**, Kristensen J., *IEEE Blockchain, 2022*

Cryptocurrency price prediction with Multi-task Multi-step Sequence-to-Sequence Modeling 2022

- Kristensen J., Madrigal-Cianci J.P., **Felekis Y.**, Liatsikou M., *IEEE Blockchain, 2022*

exGPT: An Extractive-Abstractive Summarization Framework with a Sentence Embeddings Twist 2020

- Minto L., Kmec J., **Felekis Y.**, Filippi G., *preprint*

Deep Learning for Agricultural Land Detection in Insular Areas 2019

- Charou E., **Felekis Y.**, Bournou D., Maria Koutsoukou M., Panagiotopoulou A., Voutos Y., Bratsolis E., Mylonas P., Likforman-Sulem L., *10th International Conference on Information, Intelligence, Systems and Applications (IISA), 2019*

Experience

Research Intern Jun. 2025 – Aug. 2025
Spotify *London, UK*
- Work at the Advanced Causal Inference lab under the supervision of Dr. Ciarán Gilligan-Lee.

Research Engineer Dec. 2021 – Jul. 2022
Advanced Blockchain AG *Berlin, DE*
- Work on the intersection of Artificial Intelligence and Blockchain technology and the mathematical aspects of DeFi. Specifically, study of the Automated Market Makers' dynamics via Multi-agent Reinforcement Learning Simulations and Adversarial Learning.
- Organizer of the weekly Research seminar (paper reviews, invited talks, brainstorming sessions).

Machine Learning Engineer Aug. 2021 – Dec. 2021
Ernst & Young (EY) *Athens, GR*
- Work on AI-related platforms and technologies with a focus on Natural Language Processing and Natural Language Understanding at the IBM TechHub of EY. In particular, the work was focused on Text Classification, Document Retrieval, QA, and summarization tasks.

Machine Learning Engineer Jan. 2021 – Jun. 2021
LangAware *Athens, GR*
- Design and develop productised and deployed machine learning models for predicting neurodegenerative diseases with Natural Language Processing techniques. Specifically, work on Dementia, Alzheimer and Parkinson's diseases.

Visiting Researcher Sep. 2019 – Sep. 2020
National Centre for Scientific Research "Demokritos" *Athens, GR*
- Mentoring and supervising internship projects of undergraduate students, as part of their BSc Diploma.

Research Scientist Dec. 2018 – Aug. 2019
National Centre for Scientific Research "Demokritos" *Athens, GR*
- Experimentation with Transfer Learning techniques with popular neural network architectures (AlexNet, ResNet, VGG16).
- Creation of a Sentinel-2A based dataset called "Ionio dataset" and training of a Convolutional Neural Network in order to classify Agricultural and Non-Agricultural land cover.
- Organise multiple workshops as the main speaker for students and researchers on Deep Learning techniques and their applications to Remote Sensing.

Research Intern Aug. 2018 – Dec. 2018
National Centre for Scientific Research "Demokritos" *Athens, GR*
- Literature review of SOTA Deep Learning models for remote sensing image processing and satellite imagery.

Honours & Awards

Alan Turing Institute Placement Award Oct. 2024 – Jul. 2025
- Awarded as part of the Enrichment Scheme, to PhD students from across the UK to spend 9 months in the Alan Turing Institute.

Fully funded PhD position Oct. 2022 – Apr. 2026
- Awarded via the UKRI Turing AI Acceleration Fellowship [EP/V02678X/1]: "Machine Learning Foundations of Digital Twins", awarded to Prof. Theodoros Damoulas

Onassis Scholarship for Doctoral Studies Oct. 2022 – Oct. 2025
- Awarded in recognition of outstanding academic performance.

Supervision

Luke Padmore, MSci Data Science Thesis Oct. 2024 – Jul. 2025
co-supervise with Prof. Theo Damoulas and Prof. Fabio M. Zennaro *University of Warwick*

Tanatip Timtong, BSc Computer Science Thesis Jul. 2022 – Apr. 2023
co-supervise with Prof. Theo Damoulas *University of Warwick*

Mary Karatzoglidi, Research Internship Sep. 2019 – Jan. 2020
co-supervise with Dr. Eleni Charou *NCSR "Demokritos"*

Talks & Posters

From Patterns to Principles: Towards Causal and Scientific AI — Jun. 2025
AI and Society symposium — *University of Warwick, Coventry, UK*

Towards Causal Neuroabstractions — Feb. 2025
NeuroAI seminar series — *The Alan Turing Institute, London, UK*

Interventionally Consistent Surrogates for Complex Simulation Models (poster) — Dec. 2024
Annual Conference on Neural Information Processing Systems — *Vancouver, CA*

Causal Optimal Transport of Abstractions — Dec. 2024
Causal Club reading group — *University of Pisa, Pisa, IT*

Think, Reason and Learn in Multi-Scale Causal Systems — Nov. 2024
CS & Stats PhD research seminar — *University of Warwick, Coventry, UK*

Causal Optimal Transport of Abstractions — May 2024
Algorithms & Computationally Intensive Inference Seminar — *University of Warwick, Coventry, UK*

Causal Optimal Transport of Abstractions — Apr. 2024
Stanford AI Lab — *Stanford University, Palo Alto, CA, USA*

Causal Optimal Transport of Abstractions (poster) — Apr. 2024
Causal Learning and Reasoning (CLeaR) — *UCLA, Los Angeles, CA, USA*

Bridging micro and macro causal realms — Dec. 2023
Warwick Postgraduate Colloquium in Computer Science — *University of Warwick, Coventry, UK*

Probabilistic Deep Learning with Generalised Variational Inference (poster) — Feb. 2022
4th Symposium on Advances in Approximate Bayesian Inference — *Virtual Event*

MSc Thesis Presentation — Jan. 2021
NCSR "Demokritos" Machine Learning seminar series — *NCSR "Demokritos", Athens, GR*

Machine Learning methods for satellite image processing — Jul. 2020
55th Summer School of NCSR "Demokritos" — *NCSR "Demokritos", Athens, GR*

Deep Learning for Agricultural Land Detection in Insular Areas — Jul. 2019
10th International Conference on Information, Intelligence, Systems and Applications — *University of the Peloponnese, Patras, GR*

Deep Learning trends & techniques — Sep. 2019
Computational Intelligence Lab seminar — *NCSR "Demokritos", Athens, GR*

Convolutional Neural Networks for Land Use Land Cover classification — May 2019
Computational Intelligence Lab seminar — *NCSR "Demokritos", Athens, GR*

Organization

Causal Abstractions and Representations workshop — Jul. 2025
Workshop at the conference on Uncertainty in Artificial Intelligence (UAI) — *Rio de Janeiro, BR*

Interdisciplinary AI and Society Symposium — Jun. 2025
Social laws, social dynamics and concepts of society. — *University of Warwick, Coventry, UK*

Physics-informed Machine Learning seminar series — Nov. 2024 – Jun. 2025
Explores real-world applications of Φ-ML methods to the engineering practice. — *The Alan Turing Institute, London, UK*

Advanced Topics in Machine Learning WMLG reading group — Jan. 2023 – Jan. 2025
Focus: Causality, Robustness, Statistical Machine Learning. — *University of Warwick, Coventry, UK*

Three-day Hackathon — Apr. 2023
Causal discovery for cancer; Learning to run a power network; Low cost climate prediction — *University of Cambridge, Cambridge, UK*

Computational Intelligence Lab seminar — May. 2019 – Sep. 2019
Organized workshops, seminars and invited talks — *NCSR "Demokritos", Athens, GR*

Academic Service

- AAAI Conference on Artificial Intelligence
- Conference on Uncertainty in Artificial Intelligence (UAI)

Technical Skills

Languages & Developer Tools: Python, Matlab, Julia, Git, Google Cloud Platform, IBM Watson
Libraries: PyTorch, Keras, Scikit-learn, Pandas, NumPy, Matplotlib

Languages

Greek: Native **English**: Fluent **French**: Intermediate **Spanish**: Beginner