

Konstantinos P. Panousis

ASSISTANT PROFESSOR: STATISTICAL MACHINE LEARNING

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Education

PhD in Statistical Machine Learning

Dec. 2015 - Jun. 2020

NKUA (NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS) (LINK)

Athens, Greece

- **Subject:** *Non-parametric Bayesian approaches to Deep Neural Networks*. **Advisor:** Sergios Theodoridis.
- Developed bleeding-edge deep networks via novel competition-based and non-parametric Bayesian arguments with significant compression and generalization capabilities.

MRes in Computational Statistics and Machine Learning

Sep. 2014 - Sep. 2015

UCL (UNIVERSITY COLLEGE LONDON), DISTINCTION

London, United Kingdom

- **Focus:** Advanced Topics in ML, Approximate Inference and Learning in Probabilistic Models, Probabilistic and Unsupervised Learning.
- **Thesis:** *Variational Gaussian Process Expectation Maximization for Neural Accumulators*. **Advisor:** Maneesh Sahani

Electronic and Computer Engineering (5-year Diploma)

Sep. 2008 - Jun. 2014

TUC (TECHNICAL UNIVERSITY OF CRETE), 7.79/10

Chania, Greece

- **Focus:** Machine Vision, Artificial Intelligence, Autonomous Agents, Algorithms and Complexity, Speech Processing.
- **Thesis:** *Real-time Planning and Learning in the Settlers of Catan Strategy Game*. **Advisor:** Georgios Chalkiadakis

Research Experience

Postdoctoral Researcher: H2020-MSCA-RISE: AERAS

Feb. 2024 - Feb. 2025

ETHICAL AI NOVELTIES

Limassol, Cyprus

- Objective: Development of ML-based and data-driven cybersecurity training programmes.

Advisory Council Member

Jan. 2024 - Pres.

ETHICAL AI NOVELTIES

Limassol, Cyprus

- Member of the Advisory Council of AI CYPRUS ETHICAL NOVELTIES LTD.

Postdoctoral Researcher: Towards Explainable AI for Species Identification

Apr. 2023 - Feb. 2024

INRIA

Montpellier, France

- Developed inherently interpretable models via solid Variational Bayesian arguments.

Project Coordinator: "Towards Explainable Deep-Learning for viDEo-surveillance"

Aug. 2022-Jul. 2023

CYPRUS UNIVERSITY OF TECHNOLOGY

Limassol, Cyprus

- Created explainable deep networks for Computer Vision via Transformer Networks and Stochastic Competition based activations.

Technical Director: H2020-MSCA-RISE -aRTIFICIAL iNTELLIGENCE for the Deaf (aiD)

Feb. 2022 - Apr. 2023

CYPRUS UNIVERSITY OF TECHNOLOGY

Limassol, Cyprus

- Designed highly innovative models; supervised and advised graduate and doctoral researchers in Computer Vision and NLP; Organization, Reporting and coordination with all the partners of the project.

Postdoctoral Researcher: Deep Dictionary learning for fMRI Data Analysis

Nov. 2021 - Apr. 2022

COMPUTER TECHNOLOGY INSTITUTE AND PRESS "DIOPHANTUS"

Athens, Greece

- Developed non-parametric Bayesian approaches using Indian Buffet Process and BNNs (pyTorch).

Postdoctoral Researcher: INCOGNITO-IdeNtity verifiCatiOn with privacy-preservinG credeNtials for anonymous access To Online services

Aug. 2021 - Jan. 2022

CYPRUS UNIVERSITY OF TECHNOLOGY

Limassol, Cyprus

- Developed cutting edge deep learning models for privacy aware methods (pyTorch).

Postdoctoral Researcher: H2020-MSCA-RISE -aRTIFICIAL iNTELLIGENCE for the Deaf (aiD)

Jul. 2020 - Jul. 2021

CYPRUS UNIVERSITY OF TECHNOLOGY

Limassol, Cyprus

- Published several architectures for Computer Vision; Adversarial Robustness, Information Theory, Transformer Networks.

Research Associate: Machine Learning Approaches for Stress-Testing (POST-DOC/0718/0196)

Aug. 2019 - May 2020

CYPRUS UNIVERSITY OF TECHNOLOGY

Athens, Greece

- Developed cutting-edge deep networks for early-warning Stress-Tests for financial institutions (TensorFlow).

Research Associate: *REVEAL-REVEALing hidden concepts in Social Media (E-11834)*

Feb. 2016 - Nov. 2016

NCSR DEMOKRITOS

Athens, Greece

- Research and development towards knowledge extraction from texts mined from Social Networks (Python).
- Designed and implemented HMMs and W2V methods for topic extraction.

Academic Experience & Seminars

Assistant Professor

Feb. 2025 - Pres

ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

Athens, Greece

Position: Statistical Machine Learning

Invited Speaker

May 2024

LIRMM, MODULE IMAGE

Montpellier, France

- Deep Learning - A Variational Bayesian Perspective

Lecturer: Data Science/Intro to ML

March. 2023 - Sep. 2023

EPF SCHOOL OF ENGINEERING

Montpellier, France

- Organized and taught the Introduction to Data Science course of the Energy and Environment Major.

Lecturer: Dimensionality Reduction Course

September. 2023 - October. 2023

EPF SCHOOL OF ENGINEERING

Montpellier, France

- Organized and taught the Dimensionality Reduction course of the Data Engineering Major.

Lecturer: Post-graduate ML Course

Feb. 2021 - Aug. 2021

Feb. 2022 - Aug. 2022

NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS

Athens, Greece

- Organized and taught the post-graduate ML course of the Department of Informatics and Telecommunications.

Teaching Assistant: Digital Signal Processing course

Sep. 2017 - Jan. 2018

Sep. 2019 - Jan. 2020

NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS

Athens, Greece

- Organized and performed hands-on exercises/programming for the course.

Invited Speaker

Jun. 2019

UNIVERSITY OF CAMBRIDGE, ENGINEERING DEPARTMENT

Cambridge, UK

- Deep Neural Networks: A Nonparametric Bayesian Approach with Local Competition.

Publications

-**Coarse-to-Fine Concept Bottleneck Models**, K. P. Panousis, D. Ienco, D. Marcos, NeurIPS 2024, December 2024

-**DISCOVER: Making Vision Networks Interpretable via Competition and Dissection**, K. P. Panousis, S. Chatzis, NeurIPS 2023, December 2023 (Link)

-**Sparse Linear Concept Discovery Models**, K. P. Panousis, D. Ienco, D. Marcos, ICCVW-CLVL 2023, October 2023 (Link)

-**A New Dataset for End-to-End Sign Language Translation: The Greek Elementary School Dataset**, A. Voskou, K. P. Panousis, H. Partaourides, K. Talias, S. Chatzis, ICCVW-ACVR 2023, October 2023 (Link)

-**A Deep Learning Approach for Dynamic Balance Sheet Stress Testing**, A. Petropoulos, V. Siakoulis, K. P. Panousis, L. Papadoulas, S. Chatzis, ICAIF-22, November 2022 (Link)

-**Competing Mutual Information Constraints with Stochastic Competition-based Activations for Learning Diversified Representations**, K. P. Panousis, A. Antoniadis, S. P. Chatzis, AAAI-22, March 2022 (Link)

-**Stochastic Local Winner-Takes-All Networks Enable Profound Adversarial Robustness**, K. P. Panousis, S. Chatzis, S. Theodoridis, NeurIPS Bayesian Deep Learning Workshop, December 2021 (Link)

-**Variational Conditional Dependence Hidden Markov Models for Skeleton-Based Action Recognition**, K. P. Panousis, S. Theodoridis, S. Chatzis, International Symposium on Visual Computing (ISVC), October 2021 (Link)

-**Stochastic Transformer Networks with Linear Competing Units: Application to end-to-end SL Translation**, A. Voskou, K. P. Panousis, D. Kosmopoulos, D. N. Metaxas, S. Chatzis, International Conference on Computer Vision (ICCV), October 2021 (Link)

-**Dialog Speech Sentiment Classification for Imbalanced Datasets**, S. Nicolaou, L. Mavrides, G. Tryfou, K. Talias, K. P. Panousis, S. Chatzis, S. Theodoridis, International Conference on Speech and Computer (SPECOM), September 2021 (Link)

-**Local Competition and Stochasticity for Adversarial Robustness in Deep Learning**, Konstantinos P Panousis, Sotirios Chatzis, Antonios Alexos, Sergios Theodoridis, Artificial Intelligence and Statistics (AISTATS) , April 2021 (Link)

-**Nonparametric Bayesian Deep Networks with Local Competition**, Konstantinos P Panousis, Sotirios Chatzis, Sergios Theodoridis , International Conference on Machine Learning (ICML) , June 2019 (Link)

IT & ML Skills

PROGRAMMING

Python/pyTorch/Tensorflow ●●●●●
Matlab/R ●●●●●
Java ●●●●●
C ●●●●●
MySQL/PostgreSQL ●●●●●

LIBRARIES

Pandas, Scikit-learn ●●●●●
NumPy & SciPy ●●●●●
NLTK & OpenCV ●●●●●
Matplotlib & Seaborn ●●●●●

WEB DEVELOPMENT & TYPESETTING

HTML & CSS ●●●●●
L^AT_EX ●●●●●
Flask & Nginx ●●●●●
Javascript & JSP ●●●●●

Misc

REVIEWING

ICML (Gold Reviewer 25% 2026) NeurIPS ICLR
ICCV AISTATS AAAI

LANGUAGES

Greek: Native Speaker ●●●●●
English: Highly proficient ●●●●●
French: Working knowledge ●●●●●

OPERATING SYSTEMS

Linux: All Flavors, Windows ●●●●●
MacOS ●●●●●

SOFT SKILLS & INTERESTS

Adaptability Problem-Solving Self-discipline
Time management Coding Machine Learning
Philosophy