

## EDUCATION

### Ph.D. in Machine Learning

Nov. 2024 – Present

National and Kapodistrian University of Athens, Department of Informatics and Telecommunications

Ph.D. degree offers me specialized knowledge in theory based Machine Learning.

- Supervisor: Christos Tzamos.
- Research interests: Transformers, Neural Networks, Optimization, Combinatorials.
- Published at: NeurIPS (1).

### M.Sc. in Statistical Science

Oct. 2020 – Sep. 2021

University of Oxford, Department of Statistics, Lincoln College

Master degree offered me broad high-level training in Statistics and Machine Learning.

- Courses: Statistical Machine Learning, Algorithmic Foundations of Learning, Advanced Simulation Methods, Computational Statistics, Applied Statistics, Bayes Methods, Foundations of Statistical Inference, Statistical Programming.
- Thesis: *Authorship Attribution in Ancient Greek Texts*, co-supervised by Yannis Assael, George Deligiannidis, and Thea Sommerschild – Grade: **61%**.
- Grade: **Merit**.

### B.Sc. in Mathematics

Sep. 2016 – Aug. 2020

University of Patras, Department of Mathematics

Undergraduate degree offered me broad knowledge in a wide range of Mathematics and motivated me to focus on Statistics and Computer Science.

- Division of Statistics, Probability Theory & Operational Research.
- Thesis: *Mathematical Techniques in Data Science and Machine Learning*, under the supervision of Michael N. Vrahatis – Grade: **10.00/10.00**.
- Grade: **8.90/10.00** (Distinction), equivalent to first-class honours (**top 1%**).

### Summer School in Economic Networks

Jul. 2021

University of Oxford

Studied quantitative methods, applications, and impacts of network theory within Economics.

### Summer School of Nuclear and Particle Physics

Jul. 2020

National Centre for Scientific Research Demokritos

Worked on topics of Computer Science, Machine Learning, Nuclear, and Particle Physics – CERN.

### Summer School in Python

Jul. 2019

University of Patras, Aristotle University of Thessaloniki, Ionian University

Intensive summer school on advanced themes of Data Analysis and Machine Learning, using Python.

## EXPERIENCE

### Ph.D. Researcher

Jul. 2024 – Present

Archimedes, Athena Research Center

Conducting research on theory-based Machine Learning models through Optimization and Statistics under the supervision of Christos Tzamos.

### Research Assistant

Apr. 2024 – Jun. 2024

Technical University of Denmark, Department of Applied Mathematics and Computer Science

Explored Deep Learning theory via Riemannian geometry under the supervision of Georgios Arvanitidis.

**Research Assistant**

Apr. 2023 – Dec. 2023

*Athena Research Center, Department of Institute for the Management of Information Systems*

Researched the interface of NLP, Privacy, and Security tasks using LLMs under the supervision of Constantinos Patsakis.

**Research Assistant**

Apr. 2022 – Apr. 2024

*Czech Technical University in Prague, Faculty of Electrical Engineering*

Focused on the Mini-batch Stochastic Subgradient Projection method under the supervision of Vyacheslav Kungurtsev, and Jakub Mareček.

**Research Assistant**

Oct. 2021 – Mar. 2022

*Max Planck Institute for Mathematics in the Sciences*

Working on the authorship attribution task with a focus on Plutarch's texts using LLMs under the supervision of Ivan P. Yamshchikov, and Jürgen Jost.

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**PUBLICATIONS**

C: Conference   J: Journal   †: equal contribution.

- $C_3$  *A Derandomization Framework for Structure Discovery: Applications in Neural Networks and Beyond*. Nikos Tsikouras, Yorgos Pantis, Ioannis Mitliagkas, Christos Tzamos. [Under Review, 2026]
- $C_2^\dagger$  *Teaching Transformers to Solve Combinatorial Problems through Efficient Trial & Error*. Panagiotis Giannoulis, Yorgos Pantis, Christos Tzamos. NeurIPS 2025. [Paper]
- $J_1$  *The Anatomy of Deception: Measuring Technical and Human Factors of a Large-scale Phishing Campaign*. Anargyros Chrysanthou, Yorgos Pantis, Constantinos Patsakis. Journal Computers & Security, 2024. [Paper]
- $C_1$  *BERT in Plutarch's Shadows*. Ivan P. Yamshchikov, Alexey Tikhonov, Yorgos Pantis, Charlotte Schubert and Jürgen Jost. EMNLP 2022. [Paper]

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**HONORS & AWARDS****4-year Full Scholarship**

Jul. 2024 – Present

*Archimedes, Athena Research Center*

In support of my doctoral studies due to my background.

**Research Infrastructure Grant**

Dec. 2024 – Present

*GRNET – Greek Research & Technology Network*

In support of my doctoral research, computational resources were provided, including AWS credits and high performance computing systems.

**Full Annual Scholarship**

Oct. 2020 – Aug. 2021

*Bodossaki Foundation*

In support of my master's studies due to my bachelor performance.

**Covid-19 Assistance Fund**

Jun. 2021

*University of Oxford, Lincoln College*

In support of my master's studies.

**Vivian Green Student Assistance Scholarship**

Feb. 2021

*University of Oxford, Lincoln College*

In support of my master's studies.

**4-year Annual Scholarship**

Every Sept. 2016 – 2020

*Greek State Scholarships Foundation*

In support of my bachelor studies due to my bachelor performance.

**4-year Consistently in the Top 1%**

Every Sept. 2016 – 2020

*University of Patras, Department of Mathematics*

Classified in the top-tier of my class for the duration of my bachelor studies.

### **Ranked Second Among Admitted Students**

*Sept. 2016*

*University of Patras, Department of Mathematics*

Second place among accepted candidates for the bachelor's degree program.

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## SERVICE

### **Reviewer**

- NeurIPS 2025.
- ICLR 2026, 2025.
- ICML 2025.

### **Teaching Assistant**

*National and Kapodistrian University of Athens, Department of Informatics and Telecommunications*

- *Computational Learning Theory* *Fall Semester 2025*  
I contributed to the preparation of theoretical problem sets and coding examples, helping students understand foundational concepts in learning theory.
- *Artificial Intelligence II – Deep Learning for NLP* *Fall Semester 2025*  
I assisted in developing lab materials focused on practical applications in the field, while also organizing and grading assignments.

### **Exam Proctor**

*Nov. 2024 – Present*

- *National and Kapodistrian University of Athens, Department of Informatics and Telecommunications*  
Served as an exam proctor each semester across various courses, effectively co-managing and monitoring classes to ensure smooth exam administration.

### **Volunteer**

- *Archimedes, Athena Research Center* *Sept. 2025 – Present*  
Member of the organizing committee for Greece's AI competition (PDTN), preparing students for the International AI Olympiad (IOAI) through coding and theory tutorials, as well as exams.
- *University of Oxford, Lincoln College* *Sept. 2022 – Present*  
Mentor undergraduate and graduate students by providing guidance on their current studies, CV preparation, and applications for graduate programs or industry opportunities.
- *Library, University of Patras* *Sept. 2019 – Aug. 2020*  
Edited digital documents and transcribed handwritten notes to support higher education students with disabilities, including blindness, dyslexia, and other learning challenges.
- *National Technical University of Athens* *Oct. 2019*  
Engaged with the public to explain scientific concepts and advised high school students on selecting universities that align with their interests and goals.

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## TALKS

- *HSBC – on Transformers reasoning* *Sept. 2025*
- *Archimedes, Athena Research Center – on Transformers reasoning* *May 2025*