Pantia-Marina Alchirch

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EDUCATION

The University of Oklahoma
Norman, OK

PhD in Computer Science   *August 2022–Present*

- **Research focus:** AI/ML models using imbalanced and/or streaming data. Working under the supervision of Dr. Dimitris Diochnos.
- **Course highlights:** Artificial Neural Networks and Evolution, Healthcare Analysis, Parallel and Distributed Networks (PDN) Programming, Machine Learning, Artificial Intelligence.

Athens University of Economics and Business
Athens, Greece

Master of Science in Computer Science   *2021 – 2022*

- **Thesis:** Positive Correlations Between Campaigns for Influence Maximization, under the supervision of Dr. Vana Kalogeraki.
- **Course highlights:** Deep Learning, Natural Language Processing, Convex Optimization, Social Network Analysis, Distributed Systems and Cloud, Algorithmic Game Theory.

Athens University of Economics and Business
Athens, Greece

Bachelor of Science in Computer Science   *2017 – 2021*

- **Thesis:** Evolving Monotone Conjunctions in Regimes Beyond Proved Convergence, under the supervision of Dr. Katia Papakonstantinopoulou and Dr. Dimitris Diochnos.
- **Course highlights:** Machine Learning, Artificial Intelligence, Human and Computer Interaction, Advanced topics in Data Base Systems, Mathematical Logic, Advanced topics in Discrete Mathematics.

TECHNICAL SKILLS

Programming Languages: Python, Java, C, C++, C#, Kotlin, Visual Basic
Machine Learning (types, tools, and techniques): Supervised Learning, Unsupervised Learning, Reinforcement Learning, Deep Learning, Learning with Streams, Online-Learning, Evolutionary Algorithms, Evolvability, Handling Noisy and Imbalanced Data, Prompting Techniques (Chain-of-Thought, Least-to-Most), TensorFlow, scikit-learn, scikit-multiflow, River, NumPy, pandas, PyTorch (intermediate level)
Software Development: Windows, Android, Web, Git
Distributed Computing: Apache Spark, MapReduce, Socket Programming, TCP/IP Programming
Data Analysis and Management: pandas, SQL, Spark RDDs
Graph Analysis: NetworkX
Operating Systems: Linux, Windows
Documentation and Writing: LaTeX
Tools and Version Control: Git

EXPERIENCE

Graduate Teaching Assistant
August 2024 – Present

The University of Oklahoma   *Norman, OK*

- Full time Teaching Assistant for the course Theory of Computation.

Graduate Research Assistant
August 2022 – August 2024

The University of Oklahoma   *Norman, OK*

- Conducted research on learning with data streams, focusing on developing robust and effective tree-based models to handle imbalanced streaming data while maintaining interpretability. (Python, scikit-multiflow, river)
- Studied techniques for handling noisy and imbalanced data in streaming environments, including Deep Imbalanced Regression for imbalanced data and Confident Learning for noisy data. (Python, scikit-learn, pandas, NumPy)
- Explored interpretability in machine learning, applying and comparing methods like RuleFit and Falling Rule Lists to understand model decision-making.
- Investigated the mathematical proof of the experimental results from a 2022 paper on the evolvability of monotone conjunctions.

Android and Windows Developer (Full time)
October 2020 – July 2022

MCI HELLAS   *Athens, Greece*

- Developed retail-focused applications using VB.NET, C#.NET in Windows environments and Android Studio for mobile applications, integrating SQL Server and SQLite for data management.
- Implemented distributed applications leveraging common protocols (TCP/IP, HTTP) and socket programming to facilitate efficient data communication.
- Utilized various programming languages and tools including Python, Java, Kotlin, C++, and C#, adapting to diverse project requirements and environments.

Graduate Teaching Assistant   October 2021 – June 2022

Athens University of Economics and Business   *Athens, Greece*

- Full time TA for the course Distributed Systems during the spring semester of 2022.
- Full time TA for the course Data Structures during the fall semester of 2021.

PUBLICATIONS

- ***Pantia-Marina Alchirch***, Dimitrios I. Diochnos, and Katia Papakonstantinopoulou. 2022. **Evolving Monotone Conjunctions in Regimes Beyond Proved Convergence**. In Genetic Programming: 25th European Conference, EuroGP 2022, Held as Part of EvoStar 2022, Madrid, Spain, April 20–22, 2022, Proceedings. Springer-Verlag, Berlin, Heidelberg, 228–244. https://doi.org/10.1007/978-3-031-02056-8_15

SERVICE

- Reviewer for the IEEE Conference on Artificial Intelligence (IEEE CAI) 2024.

- Reviewer for the European Conference on Artificial Intelligence (ECAI) 2023.

- Reviewer for the IEEE Congress on Evolutionary Computation (CEC) 2023.

TALKS, POSTER SESSIONS, OTHER PRESENTATIONS

- ***Pantia-Marina Alchirch***, Dimitrios I. Diochnos, and Katia Papakonstantinopoulou. 2022. **Talk: Evolving Monotone Conjunctions in Regimes Beyond Proved Convergence**. Presented at the Computer Science Seminar (CS Seminar), University of Oklahoma, 2023.

- **Talk:** Positive Correlations Between Campaigns for Influence Maximization. ***Pantia-Marina Alchirch*** (University of Oklahoma) and Vana Kalogeraki (Athens University of Economics and Business). Presented at the 5th Summit on Gender Equality in Computing (GEC), June 27, 2023, Athens, Greece.

- **Poster:** Positive Correlations Between Campaigns for Influence Maximization. ***Pantia-Marina Alchirch*** (University of Oklahoma) and Vana Kalogeraki (Athens University of Economics and Business). Presented at the 5th Summit on Gender Equality in Computing (GEC), June 27, 2023, Athens, Greece.

- ***Pantia-Marina Alchirch***, Dimitrios I. Diochnos, and Katia Papakonstantinopoulou. 2022. **Poster: Evolving Monotone Conjunctions in Regimes Beyond Proved Convergence**. Presented at the 25th European Conference on Genetic Programming, EuroGP 2022, part of EvoStar 2022, Madrid, Spain, April 20–22, 2022.

AWARDS AND SCHOLARSHIPS

- Gallogly College of Engineering Scholarship, Fall 2024, Spring 2025.

- Gallogly College of Engineering Scholarship, Fall 2023, Spring 2024.

- AI/ML Computer Science Scholarship, Fall 2023.