Paul Maximilian Magos

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Bio

I hold a cum laude Master's in AI from the University of Pisa, where my thesis introduced a novel autoregressive GNN for multivariate time series generation. My core focus is developing and applying Graph Neural Networks for complex time series analysis. At ION Trading, I engineer AI systems that model client needs and market data to provide automated guidance on financial investments. Looking forward, I aim to pivot my core expertise in spatiotemporal modeling towards critical societal problems, specifically within the domain of energy informatics.

Education

2022 – 2024: **Master of Science, Artificial Intelligence**, *University of Pisa*.
Final Score: 1.0 cum Laude

In these years of my Master's Degree, I had the opportunity to improve my skills through many Computer Science courses such as Information Retrieval, and also many AI arguments such as state-of-the-art Machine Learning models, Data Mining, Deep Learning, Reinforcement Learning, Natural Language Processing, Bioinformatics and many more.

2019 – 2022: **Bachelor of Science, Computer Science**, *University of Pisa*, Final Score: 1.5, During my Bachelor's Degree I have developed a comprehensive understanding of computer science topics, including computational complexity, mathematical analysis, programming, etc.

Theses

2024 **Master's Degree Thesis**, ***Multivariate Timeseries Generation with Autoregressive Graph Neural Networks***, We analyzed the literature finding a gap concerning Multivariate time series generation leveraging the spatial dependencies and then we introduced a novel approach to address the task of Multivariate Timeseries Generation through Graph Neural Networks..
Supervisor: Prof. Davide Bacciu

2022 **Bachelor's Degree Thesis**, ***Evaluation of the use of Crunchbase for Analyzing Highly Skilled Human Migration***, I have conducted a research project on highly skilled human migration, exploring its economic and social significance. Developed a methodology for collecting and extracting migration patterns from Crunchbase data, assessing its reliability through comparison with official data sources. Acquired skills in web scraping, Python programming, data visualization, and correlation analysis. The project involved in-depth analyses of Crunchbase user demographics, comparison studies with the Multi-aspect Integrated Migration Indicators (MIMI) dataset, and validation procedures. Thanks to this experience I have gained experience in handling complex data and addressing research questions in interdisciplinary contexts, *Github Link*.
Supervisor: Prof. Alina Sîrbu

Publications

20/04/2024 **A. Sirbu, D. Goglia, J. Kim, P. M. Magos, L. Pollacci, S. Spyratos, G. Rossetti, and S. M. Iacus**, International Mobility between the UK and Europe around Brexit: a Data-Driven Study, ***Springer's Journal of Computational Social Science*** DOI: *10.1007/s42001-024-00277-4*.

Working **P. M. Magos, L. Simone and D. Bacciu**, ASMR: Autoregressive Mixture Density Network, ***ICASSP26*** - Master's Derived Article.

Research Experience

University of Pisa

01/2024 – 06/2024 **Research Fellowship**, Research Fellowship under the supervision of Prof. Alina Sîrbu, focused on Post, formerly Tweets, retrieval for text sentiment analysis, image tagging, video transcription, and subsequent analysis.

Advisor : **Prof. Alina Sîrbu**, *Formerly Associate Professor, Computer Science Dept. University of Pisa*

03/2022 – 07/2022 **HummingBird Research Collaboration**, We developed an indicator for estimating brain drain in Europe using Crunchbase data. This Research collaboration is related to my Bachelor's Degree Thesis and it was included in a research article. *Report*.

Advisor : **Prof. Alina Sîrbu**, *Formerly Associate Professor, Computer Science Dept. University of Pisa*

Work Experience

Feb. 2025 – Present **Software & AI Engineer**, *ION Trading Srl*, Italy.
Working on the backend of a financial product, making software architecture decisions and feature development in Java. Additionally, 20% of the time is allocated to a research project exploring applications of artificial intelligence in financial systems.

Aug. 2022 – Nov. 2022 **Freelance Software Engineer**, *PRIMIS Srl*, Italy.
Developed a smart routing logistics program to optimize delivery routes based on a set of orders. The system minimized both total distance and travel time using route optimization algorithms.

Awards & Certificates

02/2025 **Aha! Product Management Professional Certificate**

02/2025 **Career Essentials in GitHub Professional Certificate**

02/2025 **Docker Foundations Professional Certificate**

03/2021 – 09/2021 ***Winner, Samsung Innovation Campus 2021 Edition*** *I was part of the winning group recognized for outstanding innovation and contributions during the Samsung Innovation Campus 2021 Edition.*

Skills

Languages English ***C1***, Italian ***Native***, Romanian ***Native***, German **Learning**

Programming, Technologies ***Python***, ***Tensorflow***, ***PyTorch***, ***Torch Spatiotemporal***, ***Keras***, ***C***, ***C++***, ***Java***, ***Git***, ***Web Crawling***, ***Vue.Js***

Positions of Responsibility

02/2024 – 05/2024 **Team Leader**, *Laboratory on ICT Startup Building*, University of Pisa, I had the opportunity to coordinate the proof of concept of a Startup idea, in the field of AI applications. The idea was based on summarization and automatic mind map creation from student's notes.

09/2023 – 12/2023 **Project Manager**, *Smart Application Course*, University of Pisa, I coordinated the development of a Smart Reporting Platform for the industrial domain as part of the Master's degree program. Responsibilities include overseeing project milestones, managing team members, and ensuring successful project delivery.

Latest Projects

2023/2024 **Exams projects**, *I was part of many group projects during the Master in which we addressed many tasks related to the AI domain, like optimal path finding, writing neural networks from scratch, question generation models fine-tuning, cell analysis tools comparisons, data mining techniques and many more.*, *AIF*, *ML*, *DL*, *NLP*, *Data Mining*, *Tools Eval*, *Smart Report Dashboard*.