Denis D'Ambrosi

dambrosidenis@gmail.com | linkedin.com/in/denis-dambrosi | github.com/dambrosidenis

EXPERIENCE

Research fellow   April 2024 – Present
Apart Research   *Remote*
- Conducted research on the integration of formal methods and LLMs
- Designed an MVP for a new cybersecurity benchmark
- Designed a provably correct sandbox for evaluating attacks on security protocols

Research assistant   Oct 2023 – Present
Alpen Adria Universitaet, TIG Lab   *Klagenfurt, Austria*
- Implemented and compared several state-of-the-art models for time series forecasting and analysis
- Designed a novel GNN architecture for few-shot emotion recognition based on EEG signals
- Co-authored two book chapters (Springer, one under review) and a conference paper (IEEE, under review)

EDUCATION

Honours School di Toppo Wassermann   Udine, Italy
Honours program in Computer Science   *Oct 2022 – Present*
- Relevant coursework: Distributed systems, Lambda Calculus

University of Udine and Alpen Adria Universitaet   Udine, Italy and Klagenfurt, Austria
M.S. in Artificial Intelligence & Cybersecurity   *Oct 2022 – Present*
- Relevant coursework: Deep Learning, Verification and Validation techniques for AI & Cybersecurity, Computer Network Security

University of Udine   Udine, Italy
B.S. in Computer Science   *Sep 2019 – Oct 2022*
- Relevant coursework: Machine Learning, Computer Networks

PROJECTS

Few-Shot Time Series Forecasting Models   Oct 2023 – Feb 2024
Deep Learning Book Chapter   *Python, Pytorch*
- Wrote a comprehensive literature review about Meta-Learning for time series forecasting and analysis
- Implemented from scratch and compared 4 state-of-the-art models for few-shot regression
- Published as: Kambale, W. V., D'Ambrosi, D., Fasouli, P., & Kyamakya, K. (2023, October). Meta-Learning for Time Series Analysis and/or Forecasting: Concept Review and Comprehensive Critical Comparative Survey. In *International Conference on Autonomous Systems* (pp. 80-109). Cham: Springer Nature Switzerland.

Formal Verification of the Session Protocol in the Symbolic Model   Feb 2022 – Sep 2022
B.S. Thesis   *JavaScript, Tamarin Prover*
- Reverse engineered a multi-layered security protocol from the source code of a new messaging application
- Formally verified all the sub-protocols implemented in the app within Dolev Yao's threat model
- Designed a symbolic formalization for onion-routed networks

ASSOCIATIONS

LeadTheFuture   Oct 2023 – Present
Mentee   *https://www.leadthefuture.tech*
- Engaged in a exclusive (13% acceptance rate) STEM mentorship program fostering entrepreneurial skills, personal growth, and academic excellence under professional guidance

MadrHacks   2020 – 2023
Member   *https://www.madrhacks.org*
- Member of the Cybersecurity team of the University of Udine, placed 1st in Italy and 19th worldwide in 2023 according to CTFTime