SKILLS

Artificial Intelligence
Machine Learning
Deep Learning
Graph Neural Networks
Recurrent Neural Networks
Long Short-Term Memory Units
Bayesian Neural Networks
Probabilistic Neural Networks
Ensemble Learning
Feature Fusion
Transfer Learning
Power System Operation
Power System Analysis
Distribution Network Flexibility
Power System Dynamics
Dynamic Equivalent Networks
Optimization
Dynamic Programming
Control Systems
System Identification
Path Planning Algorithms
Natural Language Processing
Natural Language Understanding
Data Augmentation

LANGUAGES

Greek – Native Language

English – Fluent (IELTS C1)

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Demetris Chrysostomou

D. Chrysostomou is passionate about leveraging artificial intelligence to modernize and optimize energy systems. His research focuses on data-driven models that improve grid reliability, stability, and efficiency. By integrating machine learning with energy system engineering, he aims to advance smarter, more resilient, and sustainable energy infrastructures.

WORK EXPERIENCE

Ph.D. Candidate – TU Delft — Oct. 2021 – Present

- Ph.D. in Machine Learning for Control Coordination for Transmission and Distribution Grid Operation Stability.
- AI Energy lab of IEPG Group.
- MegaMind project researcher:
  - Funded by the NWO.
  - Project partners: TU Delft, TU Eindhoven, Tilburg University, University of Twente, TNO, IBM, PWC, Transdev, Enexis, Stedin, Aliander, Smart State Technology, TenneT, Equans.
- Teacher Assistant on the "*Intelligent Electrical Power Grids*" MSc Course at TU Delft, 2022, 2023.
- Energy Expert at PWC "*Data Analytics*" Workshop in Amsterdam, the Netherlands, 2022.
- Workshop Tutor for "*Graph Neural Networks in Power Systems*" in AIT, Vienna, Austria, 2023.
- Workshop Tutor for "Best Coding Practices" for the AI Energy Lab at TU Delft, the Netherlands, 2023.
- Supervisor for MSc thesis on "*Data-Driven Adaptive Dynamic Equivalent of Active Distribution Networks*."
- Secretary of TU Delft IEEE PES Chapter since 2024

R&D Intern – ABB Corporate Research — Mar. 2020 – Sep. 2020

- Research and Development at the Cyber-Physical Systems Group.
- Devised machine learning models and application logic for AI-assisted automated security testing for industrial automation systems.
- Designed software architecture for proof of concept (POC) and documented a technical summary.
- Utilized Artificial Intelligence, Natural Language Processing, and Natural Language Understanding.

Research Assistant – PSM Laboratory, UCY — Jun. 2015 – Aug. 2018

- Part-time participation in research projects.

External Evaluation Committee Member – CYQAA — May. 2018 – Jul.2018

- The Cyprus Agency of Quality Assurance and Accreditation in Higher Education.

Soldier– Cyprus National Guard — Jun. 2012 – Jun. 2014

EDUCATION

Robotics, Systems and Control MSc – ETH Zurich — Sep. 2018 – Jun. 2021

- Thesis: "Optimal learning task paths for neural networks"
  - Supervisors: Dr. Julian Zilly, Dr. Andrea Censi, Prof. Emilio Frazzoli
- Semester Project: "Impact of Inverter-Based Generation on Islanding Detection Schemes in Distribution Networks"
  - Supervisors: Dr. Uros Markovic, Dr. Petros Aristidou, Prof. Gabriela Hug
- Modules Include Autonomous Mobility on Demand, Dynamic Programming and Optimal Control, Recursive Estimation, Introduction to Machine Learning, Probabilistic Artificial Intelligence, System Identification, Theory of Robotics and Mechatronics, and Linear Systems Theory.
- GPA 5.24 out of 6

Electrical Engineering BSc – University of Cyprus — Sep. 2014 – Jun. 2018

- Excellent Performance - GPA 9.03 out of 10 (Top 3 of the Electrical and Computer Engineering Class)

GitHub LinkedIn Google Scholar

TOOLS & LEVEL

Python
MATLAB
PyTorch
TensorFlow
Scikit-Learn
GIT
PowerFactory
Overleaf
Jupyter Notebook
Linux
Sphinx
Docker
C
RASA
Simulink
ROS
NLTK
SpaCy
MIPS-32
Java
SQL
Android Studio

HOBBIES

Painting: Hosted two personal art exhibitions.

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JOURNAL PUBLICATIONS

D. Chrysostomou, J. L. R. Torres and J. L. Cremer, "TensorConvolutionPlus: A Python package for distribution system flexibility area estimation", in SoftwareX 2025.

D. Chrysostomou, J. L. R. Torres and J. L. Cremer, "Tensor Convolution-Based Aggregated Flexibility Estimation in Active Distribution Systems", in IEEE Transactions on Smart Grid, 2024.

M. Chrysostomou, N. Christofides, D. Chrysostomou. "A Novel Machine Learning-Based Load-Adaptive Power Supply System for Improved Energy Efficiency in Datacenters". IEEE Access, 2021.

U. Markovic, D. Chrysostomou, G. Hug, P. Aristidou, "*Impact of Inverter-Based Generation on Islanding Detection Schemes in Distribution Networks*", Electric Power Systems Research (EPSR), 2021.

D. Chrysostomou, A. Dimitriou, N. Kokkinos, C. A. Charalambous *"Short-Term Electromagnetic Interference on a Buried Gas Pipeline Caused by Critical Fault Events of a Wind Park: A Realistic Case Study"*, IEEE Transactions on Industry Applications, 2020.

JOURNAL SUBMISSIONS UNDER REVIEW

D. Chrysostomou, J. L. R. Torres and J. L. Cremer, "Machine Learning-based Method to Support TSO-DSO Adaptive Coordination with Active Power Management for Instability Prevention", Under Review in IEEE Transactions on Smart Grid (2nd Round).

D. Chrysostomou, J. L. R. Torres and J. L. Cremer, "Selection for Flexibility Areas using Probabilistic Machine Learning Under Measurement Uncertainty", Under Review.

CONFERENCE PUBLICATIONS

D. Chrysostomou, J.L.R. Torres, J.L. Cremer "Exploring Operational Flexibility of Active Distribution Networks with Low Observability," IEEE Powertech Belgrade, Serbia, 2023

TECHNICAL REPORTS

P. Aristidou, D.Chrysostomou, and C.A. Charalambous, "Assessment of the Loss-of-Mains/Anti-islanding protection for the Cyprus Distribution System". Adopted by the Distribution System Operator of Cyprus, 2019.

AWARDS

Leventis Foundation
Scholarship for the MSc of Robotics, Systems and Control. 2019 & 2020

Logicom Company
Scholarship for the MSc of Robotics, Systems and Control. 2018

Electrical and Computer Engineering Department, University of Cyprus
Best Thesis of 2018 Award. 2018

Electrical and Computer Engineering Department, University of Cyprus
Award for Excellent Academic Performance. 2018

ADDITIONAL PROJECTS

- Autonomous Mobility on Demand: Fleet Autopilot – ETH Zurich.
  - Focused on Robot localization, movement planning, coordination, and precision.
- Creating a Computational Tool for Thermal Limits of Overhead and Underground Cables – UCY.
- Creating a Computational Tool Estimating Grounding Electrode Dimensions and Resistance – UCY.

MEMBERSHIPS

IEEE TU Delft PES Chapter – Secretary in 2024, 2025
IEEE TU Delft Student Branch – Member
IEEE Computer Society, Control Systems Society, and PES Society
- Graduate Student Member

GitHub LinkedIn Google Scholar