

Savvas Panagi

Electrical and Computer Engineer · Ph.D. Candidate

Cypriot
19 February 1999
Paralimni, Cyprus
Greek (native), English
Diploma (Integrated M.Eng.), NTUA
+357 99828636
savvaspanagi@gmail.com
Kleios 11, Kolossi, Limassol
savvaspanagi.github.io
github.com/savvaspanagi

Profile

Electrical and Computer Engineer and Doctoral Researcher specializing in power systems, optimization, and electricity markets. Combining academic research with industrial experience at the Electricity Authority of Cyprus, with a focus on the operation and flexibility of active distribution networks. Research activities span optimal scheduling of distributed energy resources, power system modelling and simulation, grid integration of emerging technologies, and computationally efficient methods for power system analysis.

Interests: power systems, energy markets, active distribution networks, distributed energy resources.

Work experience

MSCA Ph.D. Researcher - Doctoral Candidate

Electricity Authority of Cyprus — 06/2024 – present

Industrial Ph.D. with research focuses on the optimal operation of electric vehicles and heat pumps in active distribution networks. This PhD is part of Marie Skłodowska-Curie Doctoral Network (HORIZON-MSCA-DN): 12 projects with 10 partners in 6 countries. www.dense-dn.eu

Part-time Research Associate

Cyprus University of Technology, Sustainable Power System Lab — 01/2025 – present

TRAISIM: Research on computational efficiency and scalability of large-scale power system dynamic simulations, supporting the development of an open-source, real-time operator training platform based on Dynawo. Project page

AutoMV: Developed an automated framework for converting GIS data into simulation-ready MV distribution network models in DIgSILENT PowerFactory.

Teaching Assistant

Cyprus University of Technology — 01/2025 – 12/2026

Spring semesters: Renewable Energy (EEN 45) — hands-on laboratory sessions and coursework on wind energy, photovoltaics, and System Advisor Model (SAM).

Fall semesters: Power Electronics (EEN 443) — hands-on laboratory sessions on power converters and inverters. Power Systems II (EEN 442) — supporting power system modeling and simulation exercises using PowerFactory.

Research Associate

Cyprus University of Technology, Sustainable Power System Lab — 05/2023 – 05/2024

TSOC-OMP: Review of operating marginal policy for frequency reserves in Cyprus's power system — dimensioning inertia, FFR, FCR, FRR, and RR for day-ahead scheduling.

BESS: Collaborated with Cyprus TSO and DSO to develop energy storage system grid integration technical requirements and grid-forming inverter standards for voltage and frequency regulation.

Junior Engineer, Internship

Electricity Authority of Cyprus 10/2022 – 02/2023
Licensing applications for the installation of photovoltaic systems.

Junior Engineer, Internship

LDK Consultants 08/2022 – 09/2022
Reports for renewable-energy projects and energy audits.

Electrician Assistant

Loupan Electrical Ltd 07/2020 – 09/2020
Installation of lighting, sockets, switches, HVAC and KNX automation systems.

Waiter

The Belsito Inn, Ayia Napa 07/2016 – 09/2016
Seasonal hospitality work.

Education

Doctor of Philosophy

Cyprus University of Technology 06/2024 – present
Department of Electrical Engineering, Computer Engineering and Informatics. Thesis: *Optimal Operation of Electric Vehicles and Heat Pumps in Active Distribution Networks.*

Visiting Ph.D. Researcher

University of Manchester 11/2025 – 12/2025
MSCA DENSE secondment on stochastic scheduling for electric vehicles and heat pumps.

Diploma, Electrical & Computer Engineer

National Technical University of Athens (NTUA) 10/2018 – 02/2023
Integrated Master, GPA 8.34/10. Direction in Energy, high voltage, communications and computer networks, and decision-support systems. Thesis: *Optimal operation of smart distribution networks and energy communities.*

High School Diploma

Paralimni Lyceum 09/2014 – 06/2017
GPA 19/20. Subjects include Mathematics, Computer Science, Cisco and Physics.

Languages

- Greek — mother tongue
- English — Cambridge IELTS (2016), Cambridge IGCSE (2015)

Software knowledge

- Python
- MATLAB
- PLECS, Simulink
- PowerFactory (DIgSILENT)
- System Advisor Model (SAM)
- Simatic Manager (PLC)
- ETS (KNX)
- AutoCAD
- ArcMap
- Photoshop
- Silhouette Studio

Honours and awards

- Commendation in honour of Grigoris Farakos, for distinction among the three highest averages of the 4th year in the Energy direction (NTUA).
- Distinction throughout lyceum (2014–2017).
- Distinction throughout high school (2011–2014).

Social skills

Cooperative, creative, organised, patient, persistent.

Professional associations

2023–present Member, Cyprus Scientific and Technical Chamber (ETEK)
2024–present Student Member, Institute of Electrical and Electronics Engineers (IEEE)

Publications

- **Dynamic and Risk-Aware Procurement of Fast Frequency Response from Electric Vehicles and Heat Pumps**
  arXiv preprint, 2026. https://arxiv.org/abs/2611.24026
- **Dynamic Flexibility Requests in Local Flexibility Markets: Quantifying the DSO Willingness to Pay**
  IEEE Transactions on Energy Markets, Policy and Regulation, 2026. https://arxiv.org/abs/2608.03226
- **A Benchmarking Case Study for Local Flexibility Markets: Network, Scenarios, and Open Inputs**
  arXiv preprint, 2026. https://arxiv.org/abs/2608.02367
- **From Geographic Information System to Electrical Modeling and Analysis**
  CIRED 2026 Brussels Workshop. https://doi.org/10.1049/icp.2026.3742
- **A Design and Benchmarking Framework for Local Flexibility Markets in Active Power Systems**
  IEEE Access, 2026. https://doi.org/10.1109/access.2026.3733551
- **Towards an Open-Source Real-Time Operator-Training Platform: Analysis of Computational Efficiency**
  Electric Power Systems Research, 262, 113626, 2026. https://doi.org/10.1016/j.epsr.2026.113626
- **Network-Constrained Flexibility Quantification of Heat Pumps with Integrated Space Heating and Storage Tanks in Active Distribution Grids**
  23rd IFAC World Congress, Busan, 2026. https://sps-lab.org/publication/2026cpanagic/2026CPanagiC.pdf
- **Tuning Performance of Grey-Box Models for Thermal Building Applications**
  Smart Energy, 100239, 2026. https://doi.org/10.1016/j.segy.2026.100239
- **A Thermal-Electrical Co-Optimization Framework for Active Distribution Grids with Electric Vehicles and Heat Pumps**
  IEEE Open Access Journal of Power and Energy, 2026. https://doi.org/10.1109/OAJPE.2026.3727423
- **Adaptive Reduced System Modeling for Real-Time Dynamic Simulations**
  Power System Dynamics Summit (PoSyDyS), Graz, 2026.
  https://sps-lab.org/publication/2026celeftheriadis/2026CEleftheriadis.pdf
- **Enhanced Optimal Power Flow Using a Trained Neural Network Surrogate for Distribution Grid Constraints**
  arXiv preprint, 2026. https://arxiv.org/abs/2604.12422
- **Coordinated Curtailment of Uncontrollable Distributed Energy Resources in Isolated Power Systems**
  Sustainable Energy, Grids and Networks, 102124, 2026. https://doi.org/10.1016/j.segan.2026.102124
- **Increasing the RES Hosting Capacity of the Cyprus Distribution System Focusing on Export Limitation Schemes**
  IET Generation, Transmission & Distribution, 20(1), e70207, 2025. https://doi.org/10.1049/gtd2.70207
- **Impact of Uncontrolled Electric Vehicle Charging on Unbalanced Suburban Low-Voltage Networks**
  2025 IEEE PES Innovative Smart Grid Technologies Conference Europe (ISGT Europe), Valletta, Malta.
  https://doi.org/10.1109/isgteurope64741.2025.11305421
- **Optimal Operation of Electric Vehicles to Enhance the Flexibility Provision in Active Distribution Grids**
  2025 IEEE Kiel PowerTech. https://doi.org/10.1109/PowerTech59965.2025.11180664
- **Sizing of Fast Frequency Response Reserves for Improving Frequency Security in Low-Inertia Power Systems**
  Sustainable Energy, Grids and Networks, 42, 101699, 2025. https://doi.org/10.1016/j.segan.2025.101699
- **Impact of Fast Frequency Response on Renewable Energy Source Curtailment and Load Shedding**
  IET Conference Proceedings, 2024. https://doi.org/10.1049/icp.2024.2088

• **Comparison of Fast Frequency Response Methods in the Low-Inertia Grid of Cyprus**
SyNERGY MED 2024. https://doi.org/10.1109/SyNERGYMED62435.2024.10799326

Open data and software

• **Risk-Aware FFR Quantification Dataset: EVs and Heat Pumps**
Dataset. Zenodo, 2026. https://doi.org/10.5281/zenodo.23556477
• **Electric Vehicle and Heat Pump Stochastic Dataset**
Companion data for two-stage stochastic EV–HP scheduling. Zenodo, 2026.
https://doi.org/10.5281/zenodo.22912703
• **Local Flexibility Markets: Scenarios and Open Inputs**
Open benchmarking inputs on a modified CIGRE European MV network. Zenodo, 2026.
https://doi.org/10.5281/zenodo.21775990
• **Heat Pump Flexibility Modelling Toolkit**
Grey-box modelling of heat pumps and building thermal systems. Zenodo, 2025.
https://doi.org/10.5281/zenodo.17802474
• **Cyprus Suburban Low-Voltage Network Model**
pandapower model with topology, lines, transformer, and rooftop PV capacities. Zenodo, 2025.
https://doi.org/10.5281/zenodo.17369365

Conference participation

11/2026 MEDPOWER, Paphos. *Enhanced Optimal Power Flow Using a Trained Neural Network Surrogate for Distribution Grid Constraints.*

11/2026 MEDPOWER, Paphos. *Low-Cost Residential PV Monitoring and Fault Detection Using AC-Side Smart-Breaker Metering and Virtual Irradiance.*

10/2026 SyNERGY MED, Istanbul. *A DSO-Oriented Framework for Quantifying Flexibility Needs in PV-Rich Distribution Networks.*

08/2026 IFAC World Congress, Busan. *Network-Constrained Flexibility Quantification of Heat Pumps with Integrated Space Heating and Storage Tanks in Active Distribution Grids.*

04/2026 cresROADS, Barcelona. TRAISIM / TwinEU: open-source real-time operator training on Dynawo.

01/2026 PSCC, Limassol. *Towards an Open-Source Real-Time Operator-Training Platform: Analysis of Computational Efficiency.*

10/2025 IEEE PES ISGT Europe, Valletta. *Impact of Uncontrolled Electric Vehicle Charging on Unbalanced Suburban Low-Voltage Networks.*

09/2025 Smart Energy Systems Conference, Copenhagen.

09/2025 19th International Symposium on District Heating and Cooling, Genk. *Tuning Grey-Box Models for Thermal Building Applications.*

06/2025 IEEE PowerTech, Kiel. *Optimal Operation of Electric Vehicles to Enhance the Flexibility Provision in Active Distribution Grids.*

04/2025 4th Doctoral Colloquium, Frederick University. Intelligent operation of electric vehicles and heat pumps in active distribution grids.

04/2025 1st DENSE Thematic Workshop, University of Manchester. Ten-month Ph.D. milestone on EV penetration and flexibility.

10/2024 SyNERGY MED, Limassol. *Comparison of Fast Frequency Response Methods in the Low-Inertia Grid of Cyprus.*

06/2024 CIRED Workshop, Vienna. Poster: impact of fast frequency response on RES curtailment and load shedding.

11/2023 CIGRE Cyprus National Conference. *Fast Frequency Response Implementation in Low-Inertia Power Systems.*

Certificates

- Certified PV System Installer, Ministry of Energy, Commerce and Industry, Cyprus. Reg. EFB/440/2026 (12/11/2026–12/11/2032).
- Certificate of Competence, Electrical Engineer, Third Class, Department of Electromechanical Services, Cyprus. Reg. 109/42/9187 (27 October 2026)
- CCNA Routing and Switching — Routing and Switching Essentials (June 2017); Introduction to Networks (June 2016)
- Cambridge IELTS (2016); Cambridge IGCSE (2015)
- PVTRIN Photovoltaic Systems Installer, Cyprus Productivity Centre. 58-hour programme; passed the practical exam (15 December 2023) and the written exam (18 December 2023). Certificate TEK FB/00082.
- ETS eCampus (18 March 2023)
- ECDL AutoCAD (2014); ECDL ImageMaker / Photoshop (27 August 2013)
- ECDL: Concepts of IT (05/07/2013), Databases (30/07/2012), Spreadsheets (10/10/2011), Word Processing (10/09/2011)
- ECDL: Presentations (07/07/2011), Information and Communication (15/06/2011), Using the Computer and Managing Files (24/11/2010)

Courses and seminars

2026 DENSE workshop, ENERTRAG SE, Berlin (30/09–02/10). Open-source software development, functional programming, and grants and proposal writing for researchers. 16 hours.

2026 Summer School on Sustainable Energy Systems and Markets and Optimization Workshop, MINES Paris – PSL, Sophia Antipolis (15–19 June, 50 hours).

2026 2nd DENSE Summer School, École Centrale de Nantes — marine energies for the energy transition.

2025 1st DENSE Summer School, VITO — sector-coupled energy systems and multi-energy modelling.

2025 Summer Camp for Early Career Researchers, Cyprus University of Technology (10–12 June, 20 hours).

2025 Future Energy Systems: optimisation, data sharing and AI for market design and operation, DTU. Poster on fast frequency response.

2025 Heat Pumps in the Green Transition, PHAETHON.

2025 Power System Dynamics, CRESYM.

2024 Benefits of Creating and Managing Energy Communities, PHAETHON.

2024 Advances in Hosting Capacity, University of Melbourne.

2024 Artificial Intelligence in Creative Writing: Opportunities, Challenges, and Ethical Considerations, CUT.

2024 Deostorm Using AI: Unlocking Creativity Through the Use of Technology, CUT.

2024 Real-Time Applications for Enabling Massive Penetration of Renewable Energy Sources — from simulation to prototyping via HIL, SUNRISE.

2024 Power Electronic Converters on the Transmission System, L2EP.

2024 Qualification and Validation of Grid Services from the Grid-Forming Inverters of Hybrid and Renewable Energy Systems, ERIGrid 2.0.

2023 PV system designer and installer, CYBSE-IET.

2023 Fault diagnostics (with focus on soiling) and forecasting for monitored PV systems, CYBSE-IET.

2023 Digital tools for photovoltaic performance monitoring and fault diagnosis, CYBSE-IET.

2023 Energy storage and its enabling role in the energy transition, PHAETHON.

2023 PVTRIN, Cyprus Productivity Centre / HRDA (16/10–06/12, 58 hours). Design, installation, safety, maintenance, and operation of grid-connected and autonomous photovoltaic systems.