# Iasonas Kouveliotis-Lysikatos

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*linkedin* | *github*

*Citations:* **791** | *h-index:* **12** | *i10-index:* **12**

**Google Scholar** | **Scopus**

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## Education

**PhD in Electrical Engineering** 2014 – 2019
Advisor: Prof. Nikos Hatziargyriou
Thesis: "Decentralised Operation and Control of Smart Distribution Grids"
National Technical University of Athens - NTUA Athens, Greece

**Diploma in Electrical and Computer Engineering** 2007 – 2013
Advisor: Prof. Nikos Hatziargyriou
MS thesis: "Harmonic Study in LV networks with increased PV penetration"
National Technical University of Athens - NTUA Athens, Greece

## Further Education

**One Year Master's Programme in IT Project Management** 2020 - 2022
Project management skills and leadership
Stockholm University Stockholm, Sweden

## Employment

**Assistant Professor** 2024 – current
Electrical and Computer Engineering (ECE) Department,
University of Peloponnese Patras, Greece

**Data Engineer** 2022 – 2023
The Mobility House GmbH Munich, Germany

**Postdoctoral researcher** 2019 – 2022
School of Electrical Engineering and Computer Science,
KTH – Royal Institute of Technology Stockholm, Sweden

**Research Electrical & Computer Engineer** 2018 – 2019
Intracom S.A. Telecom Solutions Athens, Greece

**PhD Candidate** 2014 – 2018
School of Electrical and Computer Engineering,
National Technical University of Athens - NTUA Athens, Greece

**Researcher in Power Systems Laboratory** 2013 – 2014
School of Electrical and Computer Engineering,
National Technical University of Athens - NTUA Athens, Greece

## Teaching Experience

**Advanced Topics in Modern Power Systems** 2022 – 2022
National Technical University of Athens - NTUA
Lecturing.
Teaching assistant Online-Webinar

**EG2200 Power Generation Operation and Planning** 2021 – 2020
KTH – Royal Institute of Technology
Lecturing, student seminars.
Teaching assistant Stockholm, Sweden

**EG2340 Wind Power Systems** 2020 – 2022
KTH – Royal Institute of Technology
Lecturing, preparation and presentation and assessment of student assignments.
Teaching assistant Stockholm, Sweden

**EN2911 Individual Project in Electric Power and Energy systems** 2021 – 2022
KTH – Royal Institute of Technology
Supervising students on research practices and research problems solving.
Course coordinator Stockholm, Sweden

**Power System Analysis (Asymmetrical and Transient State)** 2016 – 2018
National Technical University of Athens - NTUA
Organization and presentation of student assignments,
laboratory tutorials, preparation of teaching material.
Teaching assistant Athens, Greece

**Introduction to Electric Energy Systems** 2015 – 2018
National Technical University of Athens - NTUA
Preparation and assessment of student assignments and laboratory tutorials.
Teaching Assistant Athens, Greece

## Teaching Qualifications & Courses

**LH231V Teaching and Learning in Higher Education** 2021 – 2022
**7.5 Credits**
KTH – Royal Institute of Technology Stockholm, Sweden

## Professional Activities

**IEEE Young Professionals Greece, Vice Chair** 2020 – Current
Organization of technical and non-technical events, workshops, and seminars to promote social networking, professional development, and enhancement of technical skills.

**Member of the local organizing committee:**
$17^{th}$ international conference on the European Energy Market.

**Switch On Innovation Lab by HEDNO**
Awarded first prize for building the prototype of a digital platform
for managing, interfacing and coordinating energy communities in Greece.

**Member of the local organizing committee:**
$9^{th}$ Mediterranean Conference on Power Generation, Transmission,
Distribution and Energy Conversion (MEDPOWER 2014).

**Serving as a Reviewer for:** 2014 – Current
IEEE Transactions on Power Systems, IEEE Transactions on Smart Grids, IET Generation Transmission & Distribution, IEEE PowerTech, IEEE PES General Meeting, Energies, IEEE ISGT Europe, IEEE European Energy Market (EEM).

## Research Projects (coordination and implementation activities)

**Spine**

"The Spine Toolbox" – Develops and validates an end-to-end modular set of open-source software tools for multi-energy systems modeling.

**E-LAND**

"Novel solutions for decarbonised energy islands" – A set of methodologies and ICT tools to optimise and control multi energy islands and isolated communities.

**GIFT**

"Geographical Islands Flexibility" – Decarbonise the energy mix of European islands and increase the penetration rate of renewable energy sources into the islands' grid.

**COMPILE**

"Integrating community power in energy islands" – Implementation of tools and methodologies for the active management of local energy communities.

**CROSSBOW**

"Management of variable renewable energies and storage units enabling a transnational Wholesale market" – Market tools implementation.

**iDISTRIBUTEDPV**

"Solar PV on the distribution grid" – Research on methodologies for distributed PV integration and pricing.

**WISE GRID**

"Solutions, technologies and business models for a smart, stable and secure and consumer-centric European energy grid" – Development of an EMS platform.

**NOBEL GRID**

"Advanced tools and ICT services to all actors in the Smart Grid and retail electricity market" – Development of an EMS platform for demand response.

**DREAM**

"Distributed RES Exploitation through Advanced heterarchical Management" Development of innovative tools for the simulation of local energy markets and distributed optimisation algorithms for active distribution grids.

**BEAMS**

"ICT for energy-efficient buildings and spaces of public use" – Tool development for the simulation of Building Management Systems.

**SMARTKYE**

"ICT for energy-positive neighbourhoods" – A system for smart neighborhood that will allow better business decisions based on real-time data.

**SUSTAINABLE**

"Smart Distribution System OperaTion for MAximizing the INtegration of RenewABLE Generation" – Architecture definition for Distribution System Operation tools.

## ICT Skills

**Programming**: Python, Julia, MATLAB/Simulink, GAMS, Java, C, Ethereum Blockchain (Solidity), Linux, LaTex
**Modelling Environments**: PSCAD - EMTDC, PSS/E

## Publications

### PhD thesis

T1. **I. Kouveliotis-Lysikatos**, "Development of Distributed Algorithms for the Control and Operation of Smart Distribution Grids", PhD Thesis, National Technical University of Athens (NTUA), 2019.

### Journals

J12. **I. Kouveliotis-Lysikatos**, D. Koukoula, A. Dimeas, and N. Hatziargyriou, "Plug-and-play Algorithms for the Efficient Coordination of Active Distribution Grids," in Proceedings of the IEEE, [In Press].

J11. M. Ihlemann, **I. Kouveliotis-Lysikatos**, J. Huang, et al. "The SpineOpt Multi-Energy Model Generator", in Renewable and Sustainable Energy Reviews, [In Press].

J10. P. Shinde, **I. Kouveliotis-Lysikatos**, M. Song, and M. Amelin, "A Modified Progressive Hedging Approach for Multistage Intraday Trade of EV Aggregators", Electric Power Systems Research, [In Press].

J9. P. Shinde, **I. Kouveliotis-Lysikatos** and M. Amelin, "Multistage Stochastic Programming for VPP Trading in Continuous Intraday Electricity Markets," in IEEE Transactions on Sustainable Energy, vol. 13, no. 2, pp. 1037-1048, April 2022.

J8. F. Pallonetto, M. Marin, C. O'Dwyer, J. Huang, E. Rinne, P. T. Savolainen, A. Soininen, P. Vennström, **I. Kouveliotis-Lysikatos**, M. Ihlemann, E. Delarue, T. O'Donnel, J. Dillon, M. Amelin, L. söder, and J. Kiviluoma, "Spine Toolbox: A flexible open-source workflow management system with scenario and data management", SoftwareX, Volume 17, 2022.

J7. **I. Kouveliotis-Lysikatos**, A. Waernlund, M. Marin, M. Amelin, and L. Söder, "Open Source Modelling and Simulation of the Nordic Hydro Power System," in Energies, vol. 14, no. 514(5), pp.1425, 2021.

J6. A. Chronis, F. Palaiogiannis, **I. Kouveliotis-Lysikatos**, P. Kotsampopoulos and N. Hatziargyriou, "Photovoltaics Enabling Sustainable Energy Communities: Technological Drivers and Emerging Markets", in Energies, vol. 14, no. 7, pp.1862, 2021.

J5. **I. Kouveliotis-Lysikatos**, N. Hatziargyriou, Y. Liu, and F. Wu, "Towards an Internet-like Power Grid," in Journal of Modern Power Systems and Clean Energy, vol. 10, no. 1, pp. 1-11, January 2022.

J4. M. Ghorbanian, S. H. Dolatabadi, P. Siano, **I. Kouveliotis-Lysikatos**, and N. D. Hatziargyriou, "Methods for Flexible Management of Blockchain-based Cryptocurrencies in Electricity Markets and Smart Grids," in IEEE Transactions on Smart Grid, vol. 11, no. 5, pp. 4227-4235, Sept. 2020.

J3. **I. Kouveliotis-Lysikatos**, D. I. Koukoula, and N. D. Hatziargyriou, "A Double-layered Fully Distributed Voltage Control Method for Active Distribution Networks," in IEEE Transactions on Smart Grid, vol. 10, no. 2, pp. 1465-1476, March 2019.

J2. K. E. Antoniadou-Plytaria, **I. Kouveliotis-Lysikatos**, P. S. Georgilakis, and N. D. Hatziargyriou, "Distributed and Decentralized Voltage Control of Smart Distribution Networks: Models, Methods, and Future Research," in IEEE Transactions on Smart Grid, vol. 8, no. 6, pp. 2999-3008, Nov. 2017.

J1. **I. Kouveliotis-Lysikatos**, and N. Hatziargyriou, "Fully distributed economic dispatch of distributed generators in active distribution networks considering losses," in IET Generation, Transmission & Distribution, vol. 11, no. 3, pp. 627-636, 2 16 2017.

Peer-Reviewed Conferences

C21. **I. Kouveliotis-Lysikatos**, and M. Amelin, "The value of Coordinating the Operation of Small-scale Hydro," 7th International Conference on Hydropower Scheduling in Competitive Electricity markets, [Accepted].

C20. P. Shinde, **I. Kouveliotis-Lysikatos**, and M. Amelin, "Cross-border Trading Model for a Risk-averse VPP in the Continuous Intraday Electricity Market," 2022 18th international conference on the European energy market (EEM), [Accepted].

C19. C. Fester, **I. Kouveliotis-Lysikatos**, M. Marin, and M. Amelin, "Open-Source Modelling and Simulation of a District Heating and Electricity Energy System," 2022 Open Source Modelling and Simulation of Energy Systems (OSMSES) (pp. 1-6). IEEE.

C18. A. S Kumar, **I. Kouveliotis-Lysikatos**, and L. Söder, "Comparison of Openly Available Power System Data for the Nordic Region," 2022 Open Source Modelling and Simulation of Energy Systems (OSMSES) (pp. 1-6). IEEE.

C17. P. Shinde, **I. Kouveliotis-Lysikatos**, and M. Amelin, "Analysing Trading Trends in Continuous Intraday Electricity Markets," 2021 56th International Universities Power Engineering Conference (UPEC), pp. 1-6. IEEE, 2021.

C16. A. S Kumar, **I. Kouveliotis-Lysikatos**, E. Nycander, J. Olauson, M. Marin, M. Amelin, and L. Söder, "Open Nodal Power Flow Model of the Nordic Power System," 2021 IEEE Madrid PowerTech, 2021, pp. 1-6.

C15. I. Kappos, **I. Kouveliotis-Lysikatos** and N. Hatziargyriou, "A Blockchain Platform for the Decentralized Operation of Active Distribution Networks," 2021 IEEE Madrid PowerTech, 2021, pp. 1-6.

C14. **I. Kouveliotis-Lysikatos**, M. Marin, M. Amelin, and L. Söder, "Exploring Multitemporal Hydro Power Models of the Nordic Power System using Spine Toolbox," 2020 55th International Universities Power Engineering Conference (UPEC), Torino, Italy, 2020, pp. 1-6.

C13. **I. Kouveliotis-Lysikatos**, M. Marin, J. Olason, M. Amelin, and L. Söder, "A Network Aggregation Tool for Spine Multi-Energy System Modelling Framework," 2020 International Conference on Smart Energy Systems and Technologies (SEST), Istanbul, Turkey, 2020, pp. 1-6.

C12. N. Atzarakis, **I. Kouveliotis-Lysikatos**, F. Palaiogianis, A. Vasilakis, D. Tsekeris, N., and Hatziargyriou, "Smart Energy Communities: A Case Study for Greece," CIRED-Open Access Proceedings Journal, 2020(1), pp. 136-139.

C11. **I. Kouveliotis-Lysikatos**, I. Kokos, I. Lamprinos, and Hatziargyriou N., "Blockchain-Powered Applications for Smart Transactive Grids," 2019 IEEE PES Innovative Smart Grid Technologies Europe (ISGT-Europe), Bucharest, Romania, 2019, pp. 1-5.

C10. **I. Kouveliotis-Lysikatos**, and N. Hatziargyriou, "A Distributed Load Flow Solver for Smart Grid Applications," 2018 IEEE PES Innovative Smart Grid Technologies Conference Europe (ISGT-Europe), Sarajevo, 2018, pp. 1-6.

C9. A. Anastasiou, **I. Kouveliotis-Lysikatos**, I. Karakitsios, and N. Hatziargyriou, "Comparing a Simplified Decentralized with an Optimal Centralized Technique for After Fault Reconfiguration of Radial Distribution Grids," 11$^{th}$ Mediterranean Conference on Power Generation, Transmission, Distribution and Energy Conversion, November 2018, Dubrovnik.

C8. **I. Kouveliotis-Lysikatos**, D. Koukoula, I. Vlachos, A. Dimeas, N. Hatziargyriou, and S. Makrynikas, "Decentralised distribution system operation techniques: results from the Meltemi community smart grids pilot site," in CIRED - Open Access Proceedings Journal, vol. 2017, no. 1, pp. 1673-1677, 10 2017.

C7. **I. Kouveliotis-Lysikatos**, and N. Hatziargyriou, "Distributed economic dispatch considering transmission losses," 2017 IEEE Manchester PowerTech, Manchester, 2017, pp. 1-6.

C6. **I. Kouveliotis-Lysikatos**, D. Koukoula, A. Dimeas, N. Hatziargyriou, and S. Makrynikas, "Overview of Decentralized Distribution System Operation Techniques," IET Conference Proceedings, 2016, p. 215 (4.) -215 (4.).

C5. N. Hatziargyriou, A. Dimeas, I. Vlachos, **I. Kouveliotis-Lysikatos**, D. Koukoula, S. Makrynikas, and M. Kouveletsou, "MAGIC – A Microgrid AGent Intelligent Control Device ", CIGRE Session 2016, Paris, France.

C4. **I. Kouveliotis-Lysikatos**, and N. Hatziargyriou, "Decentralized economic dispatch of distributed generators based on population dynamics," 2015 18th International Conference on Intelligent System Application to Power Systems (ISAP), Porto, 2015, pp. 1-6.

C3. **I. Kouveliotis-Lysikatos**, P. Kotsampopoulos, and N. Hatziargyriou, "Harmonic Study in LV networks with high penetration of PV systems," 2015 IEEE Eindhoven PowerTech, Eindhoven, 2015, pp. 1-6.

C2. G. Messinis, V. Kleftakis, **I. Kouveliotis-Lysikatos**, A. Rigas, A. Vassilakis, P. Kotsampopoulos, and N. Hatziargyriou, "Multi-microgrid laboratory infrastructure for smart grid applications," IET Conference Proceedings, 2014, p. 37 (6.) - 37 (6.).

C1. V. Kleftakis, G. Messinis, A. Vassilakis, P. Kotsampopoulos, A. Rigas, **I. Kouveliotis-Lysikatos**, V. Papaspiliotopoulos, G. Korres, and N. Hatziargyriou, "The NTUA Microgrid Laboratory," Symposium on Microgrids, Tianjin 2014.

## Invited Lectures

**"Blockchain technologies for the Digitization of Energy Systems"** June 2022
"Digitization of Energy Systems" - Master-level specialisation course of ECE - NTUA, Athens, Greece

**"Energy Internet"** November 2021
6th IEEE Hellenic Students and Young Professionals Congress, Athens, Greece

**"Energy Democracy and Decentralization"** March 2019
IEEE NTUA Student Chapter, Athens, Greece

**"Distributed control applications using Virtual Power Plants"** November 2018
ERIGrid Workshop: Advanced power system testing using HIL simulation, Athens, Greece

**"Distributed Control Techniques in Power System Operation"** April 2017
$9^{th}$ seminar for Next Generation of Researchers in Power Systems, Tsinghua University, Beijing, China

**"Agent-based coordination for Smart Grid and Microgrids"** December 2015
Winter School, Université Grenoble Alpes, Grenoble, France

**"Peer-to-peer electricity production and management for energy efficiency"** May 2014
CommonsFest, Heraklion, Greece

## Languages

**Greek** – Native, **English** – C2, **French** – B2, **Swedish** – A1

## PhD Student Mentoring

Priyanka Shinde, Efficient trading for wind power integration, PhD Student, KTH - Royal Institute of Technology, Stockholm, Sweden, August 2020 – June 2022.

Alexandros Chronis, Optimal operation of decentralized electricity markets for Energy Communities, PhD Student, National Technical University of Athens - NTUA, Athens, Greece, September 2020 – May 2021.

## (Co-)Supervised Master's and Bachelor's Theses

S17. Panagiotis-Christos Kotsias, Forecasting Electricity Prices for Intra-day Markets using Machine Learning (Master's thesis), KTH - Royal Institute of Technology, Expected 09-2022.

S16. Akshaya Tammanur Ravi, Open Source Grid Expansion Models for the EU Project Spine (Master's thesis), KTH - Royal Institute of Technology, 09-2021.

S15. Tony Sibo and Fredrik Lien Oscarsson, Spine for Ångermanälven (Bachelor's thesis), KTH - Royal Institute of Technology, 04-2021.

S14. Angelica Waernlund, Modelling the Nordic Hydro Power System with Spine Toolbox (Master's thesis), KTH - Royal Institute of Technology, 02-2021.

S13. Aravind Satheeskumar, New open source model of the Nordic power system for the EU project Spine (Master's thesis), KTH - Royal Institute of Technology, 09-2020.

S12. Mohammad Alharbi, Development of simplified power grid models in EU project Spine (Master's thesis), KTH - Royal Institute of Technology, 06-2020.

S11. Nikolaos Atzarakis, Modelling and Investigation of Decentralized Energy Markets in the context of Energy Communities (Master's thesis), National Technical University of Athens, 03-2020.

S10. Ilias Kappos, Utilization of Blockchain Technologies in the Economic Dispatch Problem (Master's thesis), National Technical University of Athens, 10-2019.

S9. Georgios Damaniakos, Optimal Scheduling of Lithium Ion Storage Systems Considering Degradation Costs (Master's thesis), National Technical University of Athens, 10-2018.

S8. Andreas Gatos, A Distributed Scheduling Method for Microgrid Energy Management (Master's thesis), National Technical University of Athens, 04-2018.

S7. Athanasios Anastasiou, Comparing a Simplified Decentralized with an Optimal Centralized Technique for After Fault Reconfiguration of Radial Distribution Grids (Master's thesis), National Technical University of Athens, 10-2017.

S6. Pantelis Dratsas, Distributed Economic Dispatch considering Stochastic Wind Generation (Master's thesis), National Technical University of Athens, 10-2017.

S5. Olga Kagiali, Development of Distributed Methods for the Economic Dispatch Problem (Master's thesis), National Technical University of Athens, 10-2016.

S4. Spyridon Apostolopoulos, Decentralized Voltage Control for Distribution Grids Applications (Master's thesis), National Technical University of Athens, 10-2016.

S3. Antonios Vailas, Conventional Distribution Planning Techniques and the Impact of Smart Grid Technologies (Master's thesis), National Technical University of Athens, 10-2015.

S2. Pavlos Schoinas, Distributed Solution for the Problem of Economic Dispatch (Master's thesis), National Technical University of Athens, 07-2015.

S1. Konstantinos Kotsalos, Decentralized Voltage Control in Radial Distribution Grids with Increased Penetration of Distributed Generation (Master's thesis), National Technical University of Athens, 01-2015. **Received the first prize as the Best Power Engineering Diploma Dissertation by IEEE Greece PES Chapter, 2015.**