

# Kaan Yurtseven | Curriculum Vitae

Leuven, Belgium

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## Research Profile

Ph.D. researcher at KU Leuven / Etch by EnergyVille, specializing in congestion management, stochastic optimization, HVDC operation, and risk-aware operational planning in renewable-dominated power systems. Experienced in data-driven decision frameworks for secure and cost-efficient grid operation, bridging academic research and real-world TSO challenges.

## Research and Professional Experience

### KU Leuven / Etch by EnergyVille

*Ph.D. Researcher*

Developing stochastic and risk-aware optimization frameworks for operational planning of hybrid AC/DC grids.

Leuven & Genk, Belgium

2022–Present

### TÜBİTAK (Scientific and Technological Research Council of Turkey)

*Researcher (TÜBİTAK 1507 Project)*

Project Name: Solar Power Plants Monitoring and Fault Diagnosis

Developed intelligent fault detection methods for photovoltaic systems.

Izmir, Turkey

2020–2021

### Entegro Energy Systems GmbH

*R&D Engineer*

Designed PV system projects, conducted technical analyses, and managed R&D documentation.

Germany & Turkey

2019–2022

## Grants, Awards, and Achievements

**2026:** Recipient of the Gold Award of the EERA - The European Energy Research Alliance Joint Programme on Smart Grids PhD Candidate Award

**2024:** Recipient of FWO grant ID K1A1Z24N for participation in PMAPS 2024.

**2021:** Outstanding Student Research Work, EU PVSEC 2021.

**2021:** Finalist, EU PVSEC 2021 Student Award.

## Education

### KU Leuven

*Ph.D. in Electrical Engineering*

Thesis: *Risk-based Congestion Management Under Non-Gaussian Uncertainty in Hybrid AC/DC Grids*

Supervisor: *Prof. Dirk Van Hertem.*

Co-supervisor: *Prof. Hakan Ergun.*

Leuven, Belgium

2022–Present

### Dokuz Eylul University

*M.Sc. in Electrical and Electronics Engineering*

Thesis: *Substation Expansion Planning in Power Networks with Renewable Energy Generation*

Supervisor: *Prof. Engin Karatepe.*

Graduated with High Honors, GPA 3.79/4.00.

Izmir, Turkey

2019–2021

### Kyungpook National University

*B.Sc. in Electrical and Electronics Engineering*

Exchange Student

Daegu, South Korea

2017 Spring

### Dokuz Eylul University

*B.Sc. in Electrical and Electronics Engineering (EUR-ACE®)*

Thesis: *Probabilistic Power Flow Considering Load and Wind Power.*

Graduated with Honors.

Izmir, Turkey

2014–2019

## Publications Resulting from the PhD Research

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### Journal Papers

[J1]: Yurtseven, K., Ergun, H., Van Hertem, D. "Risk Management Under Continuous Non-Gaussian Uncertainty: Coordinating Congestion Management and Balancing in Hybrid AC/DC Grids," *IEEE Transactions on Power Systems*, under review.

[J2]: Delbeke O., Bastianel G., Yurtseven, K., Ergun, H., Moschner J., Driesen J. "Hybrid Offshore Solar-Wind Farms: the Potential of Integrating Floating Photovoltaics with Offshore Wind," *Applied Energy*, 2026.

[J3]: Yurtseven, K., Koirala, A., Ergun, H., Van Hertem, D. "Congestion Management Through Stochastic Optimal Transmission Switching in Hybrid AC/DC Grids Considering Continuous Non-Gaussian Uncertainty," *IEEE Transactions on Power Systems*, 2025.

[J4]: Yurtseven, K., Koirala, A., Ergun, H., Van Hertem, D. "Stochastic Optimal Power Flow for Hybrid AC/DC Grids Considering Continuous Non-Gaussian Uncertainty," *International Journal of Electrical Power & Energy Systems*, 2025.

### Conference Papers

[C1]: Yurtseven, K., Ergun, H., Van Hertem, D., "How Does HVDC Transmission Reduce Congestion Management Costs and Balancing Risks Under Continuous Non-Gaussian Uncertainty?", *PMAPS*, Salt Lake City, Utah, United States, under review.

[C2]: Yurtseven, K., Ergun, H., Van Hertem, D., "Security-Constrained Stochastic Optimal Power Flow For Hybrid AC/DC Grids Considering Non-Gaussian Uncertainty," *IEEE Kiel PowerTech*, Kiel, Germany, 2025.

[C3]: Yurtseven, K., Ergun, H., Van Hertem, D., "Risk-Based Stochastic Optimal Power Flow for Hybrid AC/DC Grids Using Polynomial Chaos Expansion," *IEEE PES ISGT Europe*, Dubrovnik, Croatia, 2024.

[C4]: Ergun, H., Yurtseven, K., Mohy-ud-din, G., Heidari, R., "Robust and Security-Constrained Optimisation of Converter Droop Gains in Meshed HVDC Grids," *PMAPS*, Auckland, New Zealand, 2024.

[C5]: Calik, H., Ergun, H., Yurtseven, K., Van Hertem, D., "A Bi-objective Approach to Power System Restoration with Renewable Participation," *PMAPS*, Auckland, New Zealand, 2024.

## Publications Resulting from the Master's Research

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### Journal Papers

[J1]: Yurtseven, K., Karatepe, E., "Influence of Inherent Characteristic of PV Plants in Risk-Based Stochastic Dynamic Substation Expansion Planning under MILP Framework," *IEEE Transactions on Power Systems*, 2021.

[J2]: Yurtseven, K., Karatepe, E., Deniz, E., "Sensorless Fault Detection Method for Photovoltaic Systems Through Mapping the Inherent Characteristics of PV Plant Site," *Solar Energy*, 2021.

### Conference Papers

[C1]: Yurtseven, K., Karatepe, E., Deniz, E., "Data-Driven Assessment of Soiling Loss in Photovoltaic Plants," *EU PVSEC*, Lisbon, Portugal, 2021.

[C2]: Yurtseven, K., Karatepe, E., "Distribution Substation Expansion Planning Considering Different Geographical Configurations," *ATEE*, Bucharest, Romania, 2021.

## Professional Service

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**Reviewer:** IEEE Transactions on Power Systems, Applied Energy, Electric Power Systems Research.

**Memberships:** IEEE, IEEE Power & Energy Society, International Solar Energy Society.