

# Vasileios Evangelopoulos

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 Website |  GitHub

## EDUCATION

### University of Patras

October 2020 – October 2025

*MEng in Electrical and Computer Engineering*

*Patras, Greece*

- GPA: 8.22/10.0
- 5 year program with integrated Master's degree (300 ECTS)
- **Thesis:** *Control design of HVDC link with virtual synchronous generator and implementation on real-time simulator*

## PROJECTS

### Control design of HVDC link with virtual synchronous generator and implementation on real-time simulator | *Matlab, Simulink, Typhoon HIL, Python, PHIL*

[More info](#)

- Designed a VSM-based control architecture with inner current and outer voltage control loops for frequency and voltage support
- Proposed an HVDC transmission system integrating two virtual inertia technologies (VSM-SV), where the VSM regulates the DC-link voltage and the Synchronverter controls active power flow
- Validated the system via a PHIL experimental setup using two Typhoon HIL real-time simulators, programmable bidirectional PSUs, and an HVDC line module
- Under the supervision of Prof. George C. Konstantopoulos

### B-H Curve using Arduino | *Python, Matlab, Arduino, FEMM, Circuit Design*

[More info](#)

- Captured the hysteresis loop of a transformer core material using the Arduino nano microcontroller
- Designed circuits for measuring primary winding current and secondary voltage
- XY plot using Matlab and Manim python library for visualization

### FEA of a Reluctance Machine | *FEMM 4.2, Matlab, AutoCAD, Blender*

[More info](#)

- Designed a synchronous reluctance machine in AutoCAD
- Implemented a Matlab script to control FEMM software
- Post-processed FEMM data to calculate various performance parameters
- Designed a 3D model for visuals

### Differential Drive Robot | *ROS, Python, Arduino, Linux*

[More info](#)

- Implemented state estimation for a differential drive robot using Dead Reckoning method
- Developed a localization system by implementing Adaptive Monte Carlo (AMCL) via Particle Filters
- Visualized real-time sensors data and system states using RViz
- Programmed firmware using Arduino

### Monitoring & Control Propane Levels in a Tunnel | *LabVIEW, Arduino*

[More info](#)

- Implemented monitoring and control system using LabVIEW
- Developed a gas actuation mechanism and a tunnel apparatus

## PUBLICATIONS

**V. Evangelopoulos**, M.-E. Karaitsi, T. Kavvathas, T. Alexandridis, G. C. Konstantopoulos

2025

- "Combined Synchronverter-VSM based HVDC transmission design with Power-Hardware-In-the-Loop (PHIL) implementation", 2025 IEEE PES Conference on Innovative Smart Grid Technologies - Middle East (ISGT Middle East), Dubai, United Arab Emirates, doi: 10.1109/ISGTMiddleEast65737.2025.11314231.

N. Bali, **V. Evangelopoulos**, M.-E. Karaitsi, P. Bouras and J. Gialelis

2025

- "Human-centric approach for determination of Thermal Plume theoretically and experimentally", 2025 IEEE 30th International Conference on Emerging Technologies and Factory Automation (ETFA), Porto, Portugal, doi: 10.1109/ISGTMiddleEast65737.2025.11314231.

## TECHNICAL SKILLS

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**Programming Languages:** Matlab/Simulink, Python, LabVIEW, C++, HTML/CSS

**Software:** Typhoon HIL, FEMM, AutoCAD, Multisim, Microsoft Office, Blender

**Tools:** Git, GitHub, Linux, L<sup>A</sup>T<sub>E</sub>X, ROS, Oracle VirtualBox

## VOLUNTEERING

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**Project Consultant** | *Teamwork, Communication, Time management*

Mar 2023 - Jun 2023

Supervised and mentored a junior student team in the design and tuning of a PID controller for a ball-and-beam control system as part of an Electrical Engineering course project.

## SEMINARS & WORKSHOPS

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**16th ECESCON**

Apr 2025

16th Electrical and Computer Engineering Students' Conference, Aristotle University of Thessaloniki (AUTH), Greece.

**Minerva Group - Industry Visit**

Dec 2024

Attended a technical visit to the Athina Maritime Training and Development Center, featuring ship simulators, vessel control systems, and onboard safety systems as part of a professional maritime training overview

**Workshop at ELEMKO**

Apr 2024

Attended a technical workshop at a high-voltage laboratory in Thiva, including live demonstrations of lightning and impulse current testing, grounding system measurements, step and touch voltage evaluation, and safety practices in high-voltage electrical installations.

**Connecting ECE Department - University of Patras with Industry: Synergies and employment opportunities**

Apr 2024

Attended technical presentations by Hitachi Energy, Schneider Electric, and Huawei, covering the latest product innovations, emerging technologies, and sector-specific employment opportunities.

**13th ECESCON**

Apr 2022

13th Electrical and Computer Engineering Students' Conference, University of Patras, Greece.

**Resilux - Industry Visit**

Mar 2022

Attended a detailed tour of the production line, followed by an analysis of the company's organizational structure, and technical consultations with the engineering team regarding industrial workflows.

## CONFERENCES

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**IEEE PES Innovative Smart Grid Technologies (ISGT) Middle East**

Nov 2025

Organized by IEEE Power and Society and University of Dubai, UAE.

## HONORS & AWARDS

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**Top 5 Power Engineering Diploma Dissertations in Greece Dec 2025**

Dec 2025

Issued by 25th Workshop on Power Engineering Dissertations, IEEE Greek Power and Energy Society Chapter.