

Vasileios Evangelopoulos

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EDUCATION

University of Patras

MEng in Electrical and Computer Engineering

October 2020 – October 2025

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

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

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

Tools: Git, GitHub, Linux, L^AT_EX, ROS, Oracle VirtualBox

VOLUNTEERING

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

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.

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

IEEE PES Innovative Smart Grid Technologies (ISGT) Middle East

Nov 2025

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

HONORS & AWARDS

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.