Georgios Foteinopoulos

Pirgos, Hleia – Greece
(30) 6979055785 • georgefwt@gmail.com • Georgios Foteinopoulos

Profile

An electronic and computer engineer with 5 years of extensive hands-on experience in embedded systems and firmware development for complex electronic platforms. Skilled in end-to-end system integration, including embedded control, IoT connectivity, and PCB design, with strong problem-solving abilities and practical expertise in testing and validation. Passionate about delivering innovative engineering solutions, mentoring peers, and contributing effectively to interdisciplinary R&D teams in fast-paced environments.

Expertise

- Embedded microcontroller programming and IoT connectivity
- System modeling and simulation of control and embedded systems
- End-to-end embedded system development, from hardware integration to software deployment
- FPGA-based digital design and heterogeneous computing platforms

Work Experience

RnD Electronic Engineer — **Technical University of Crete**
eSOLAR project — *Mar 2020 - Oct 2023*
Designed and delivered a novel smart PV inverter system, integrating DSP-based control, IoT connectivity, and advanced embedded features for residential applications

- Developed a new type of smart low-cost single-phase PV inverter with high efficiency, high power density, high reliability, and Internet of Things (IoT) interconnectivity for use in residential PV applications
- Single-handedly designed and implemented the DSP-based embedded control firmware, hardware integration, and experimental framework of a multi-kW solar inverter, enabling a series of peer-reviewed IEEE and Springer publications.
- Built comprehensive system solutions around a DSP controller, spanning PCB design, IoT connectivity, and end-user interfaces, to deliver a robust and fully functional inverter system
- Collaborated closely with senior principal engineers in power electronics to bridge novel inverter topologies with real-time firmware, ensuring successful validation and publication of research results.
- Contributed to pioneering GMPPT control methods by enabling implementation of a novel curve-scanning algorithm for partially shaded PV arrays, achieving efficiency improvements up to 41.5× faster than conventional GMPPT techniques.
- Implemented advanced features beyond project requirements, including MPPT quick-scan, a dynamic digital communication filter, and a redesigned PSO algorithm.

General Hotel Manager — **Chania, Crete**
Kavos hotel & Suites — *Jun 2015–Nov 2015*

- Managed all daily hotel operations, including reception, reservations, payments, and guest relations, ensuring smooth and professional service delivery.
- Coordinated suppliers and supervised staff and contractors, maintaining reliable inventory and high service standards during peak season.
- Delivered exceptional customer service and problem resolution in a high-demand environment, strengthening organizational and multitasking abilities.

Education

Continuing Education & Independent Projects — **Pirgos, Hleia**
Nov 2023–present

- Explored freelance engineering opportunities, gaining exposure to diverse client requirements and workflows.
- Completed structured online training in embedded systems, ARM development, and related fields on platforms such as udemy and edX.
- Applied course knowledge by developing personal embedded prototypes and IoT experiments (ESP32, STM32), reinforcing and extending concepts through hands-on practice.

Technical University of Crete, Electronic & Computer Engineering — **Chania, Greece**
BSc and Integrated Master in Electronics and Computer Engineering — EQF Level: 7 — *Dec 2019*

Thesis: "Design of a Distributed Producer-Consumer System for Golomb Ruler Computation on a Reconfigurable Supercomputer"
Advisor: Prof. Apostolos Dollas

Leadership & Mentorship

Technical: Mentored undergraduate students in lab exercises and problem-solving for Advanced Digital Logic Design.
Provided technical guidance to peers and junior engineers in embedded systems and firmware development, fostering knowledge transfer and team growth.

Non-technical: Cultivated discipline, teamwork, and resilience through voluntary service in the Hellenic Special Forces

Calisthenics coaching, giving feedback on technique and safe practice. Regular voluntary blood donor for 12+ years

Skills

Management: Agile methodology, Waterfall

Hardware & Lab Skills: PCB design (KiCad), Oscilloscopes, Power Generators, Power Analyzers, LCR Meters, Soldering, Board debugging

Embedded Systems: TI C2000, Cortex M0+, Arduino, Xilinx FPGA, Bare metal C, Embedded C (RTOS), VHDL, Verilog, Assembly

Software Tools: Matlab/Simulink, C/C++, Java, Python

Licences/ Certifications/Achievements

Publications: 3 Peer-reviewed Journal publications, 4 Conference publications (IEEE & other)

Licences: Qualified licensed engineer and a registered member of the Technical Chamber of Greece

Certifications: Embedded Systems Essentials with Arm - ArmEducationX

Patents

[P1]: Patent No. 1010619- Reconfigurable electronic DC to AC power converter powered by a photovoltaic array (Issued)

[P2]: Patent EP4447301- Reconfigurable electronic DC to AC power converter powered by a photovoltaic array (Submitted)

Peer-reviewed Journal Publications

[J1]: G. I. Orfanoudakis, E. Koutroulis, **G. Foteinopoulos** and Wu W., Analysis and reduction of common-mode ground leakage current in transformerless PV inverters with rectified sine wave DC-link voltage. Journal of Power Electronics (2025)

[J2]: G. I. Orfanoudakis, **G. Foteinopoulos**, E. Koutroulis and W. Wu, "Dynamic Self-Reconfiguration of a Buck-Boost PV Inverter for Maximum Energy Harvesting," in IEEE Transactions on Circuits and Systems I: Regular Papers, vol. 72, no. 5, pp. 2408-2418, May 2025

[J3]: G. I. Orfanoudakis, E. Lioudakis, **G. Foteinopoulos**, E. Koutroulis and W. Wu, "Dynamic Global Maximum Power Point Tracking for Partially Shaded PV Arrays in Grid-Connected PV Systems," in IEEE Journal of Emerging and Selected Topics in Industrial Electronics, vol. 5, no. 4, pp. 1481-1492, Oct. 2024.

Peer-reviewed Conference Publications

[C1]: G. I. Orfanoudakis, E. Koutroulis, **G. Foteinopoulos** and W. Wu, "Evaluation of common-mode leakage current of Aalborg-type transformerless PV inverters," 2022 24th European Conference on Power Electronics and Applications (EPE'22 ECCE Europe), Hanover, Germany, 2022, pp. 1-10.

[C2]: G. I. Orfanoudakis, **G. Foteinopoulos**, E. Koutroulis and W. Wu, "Design optimization of Aalborg-type transformerless PV inverters with focus on power quality," 2022 11th International Conference on Modern Circuits and Systems Technologies (MOCAST), Bremen, Germany, 2022, pp. 1-5.

[C3]: G. I. Orfanoudakis, E. Koutroulis and **G. Foteinopoulos**, "The role of diodes in the leakage current suppression mechanism of decoupling transformerless PV inverter topologies," 2021 10th International Conference on Modern Circuits and Systems Technologies (MOCAST), Thessaloniki, Greece, 2021, pp. 1-4.

[C4]: G. I. Orfanoudakis, E. Koutroulis, **G. Foteinopoulos** and W. Wu, "Synchronous Reference Frame current control of Aalborg-type PV inverters," 2021 23rd European Conference on Power Electronics and Applications (EPE'21 ECCE Europe), Ghent, Belgium, 2021, pp. P.1-P.10.