Georgios Ntakos

Education

2017–2024 **University of Patras**,
Computer & Information Engineering Department (CEID).

Professional Experiences

Mar. 2023–Jun. 2023 **Internship at the Think Silicon An Applied Materials Company**.
- Collaborated with the University of Thessaloniki to replace Designware with "Soft-IP" semiconductor elements in technology-agnostic SystemVerilog, performing floating-point operations.
- Focused primarily on verifying designs in Synopsys tools, ensuring that synthesis met design specifications such as area and frequency.
- Extensively used TCL scripting to optimize Synopsys tools for efficient design synthesis and automation.
- Maintained daily communication with both the company team and the team from Thessaloniki, including regular meetings and occasional calls with Synopsys representatives to resolve specific inquiries.
- Participated in broader company meetings on other projects, contributing to general team discussions and communication.
- Offered suggestions for design improvements or modifications when necessary, playing a secondary but supportive role in the decision-making process.

Oct. 2020–Jun. 2022 **Assistant volunteer at the Basic Electronics & Digital Electronics laboratory**, *Laboratory Supervisor Georgios-Petros Oikonomou*.
- Maintained consistent communication with the laboratory supervisor to ensure smooth daily operations.
- Assisted in the evaluation and supervision of student trainees during lab sessions.
- Ensured proper maintenance of laboratory equipment and preservation of a functional and organized educational environment.
- Actively engaged in mutual peer evaluations to promote continuous improvement within the team.
- Contributed to the implementation of electronic circuits and carried out data collection and analysis of experimental results.
- Collaborated closely with a team of five members, fostering a cooperative and productive lab environment.

Diploma's Thesis

Dec. 2022–Oct. 2024 **Implementation of algorithm Hummingbird-2 Lightweight Authenticated Encryption in FPGA**, *Supervisor: Prof. Sklavos Nikolaos*.
- Designed and implemented a fully functional embedded system incorporating the Hummingbird-2 algorithm on an FPGA.
- Conducted simulation, synthesis, and full hardware implementation using ModelSim and Vivado.
- Verified correct algorithm behavior under predefined operational constraints.
- Study and simulation of the algorithm through the ModelSim tool
- Focused on performance optimization, minimizing hardware footprint and preserving low power consumption while maximizing clock frequency.
- Designed with embedded applicability in mind, considering hardware limitations typical of microcontrollers and wireless sensors.

Projects

Oct. 2020–Jan. 2021 **Head-UP Display (HUD) device with bluetooth**.
- Documented hardware specifications and system design.
- Designed both hardware architecture and embedded software.
- Conducted theoretical analysis of the HUD system.
- Developed sensor subsystem for monitoring tire temperature and pressure.

Mar. 2021–Jun.2021 **App implementation for the library of the University of Patras**.
- Collaborated within a 5-member team in a startup-style app development project.
- Defined the operational scope and system architecture.
- Applied robustness techniques for both frontend clarity and backend stability.
- Implemented core functionalities.

Technological Events & Seminars

8 Jun. 2023 **ATOMS TO ALGOS in Athens**.

- Attended the "Atoms to Algos II: Driving Chip Innovation Across the Value Chain" event in June 2023, hosted by Think Silicon and Applied Materials.
- Gained insights into the latest advancements in AI-driven semiconductor design and integration from industry leaders such as NVIDIA and Qualcomm.
- Engaged in discussions around the future of AI and its impact on chip manufacturing, including strategies for innovation in the face of the global semiconductor crisis.
- Networked with thought leaders in the fields of AI, embedded systems, and low-power GPU technology to stay informed on cutting-edge technological trends.
- Explored disruptive innovations that are shaping the next generation of application-specific chip designs for competitive industry advantages.

Skills

HDL: VHDL(primary), Verilog(secondary).

Programming Languages: C, Java, SQL.

EDA Tools: Synopsys, Vivado, Vivado HLS, ModelSim, Cadence.

Development Environments: Visual Studio, Microchip Studio.

Operating Systems: Linux.

Typesetting: LaTeX.

Languages: Greek (native), English (fluent).