

KAIPI MARIA

SOFTWARE ENGINEER



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PROFILE

Integrated Master's Degree in Electrical and Computer Engineering from the University of Patras. Experienced in software design and developing with passion to explore new technologies, face challenges and continuous evolve.

WORK EXPERIENCE

2023 - present

Research & Developer Engineer

Laboratory for Manufacturing Systems and Automation (LMS)

- Implemented a chatbot application in Python using LLMs with RAG for improved model understanding, integrated with REST API and WebSockets, and developed a JavaScript/HTML/CSS frontend with audio input/output to provide live operator assistance in collaborative tasks with robots, including refrigerator assembly/disassembly and bicycle visual inspection.
- Maintenance of the station controller application with Java Enterprise, orchestrating schedules and tasks across human and robotic resources.
- Designed and developed an evaluation tool with metrics-based performance evaluation of different scenarios generated from an external application with access to analytics and visualization.
- Implementation of a containerised, context-aware Moodle environment extended with custom plugins for adaptive learning, automated trainee progression, and real-time synchronisation with external performance data.
- Integrated optimization algorithms to support the assembly of elevator's electrical panels by robot.
- Trained team members on the use and maintenance of developed software solutions.

PUBLICATIONS

- Co-author, "Closing the Loop Between Training and Shop-Floor Performance in Industrial Setups", CLF 2026 (accepted for publication).

EDUCATION

UNIVERCITY

Department of Electrical & Computer Engineering, Univercity of Patras.

2017 - 2025

Diploma Thesis: Quantum circuit design for cryptography.

Designed and implemented a lightweight cipher, SIMPLE-RECTANGLE, with Python/Qiskit, demonstrating quantum-mechanics-inspired encryption/decryption via reversible quantum circuits.

LANGUAGES

- Greek (Native)
- English

SKILLS

- Python, Java EE, C, Large Language Models (LLMs: RAG, prompt engineering), PHP, Next.js
- TypeScript, Node.js, React, HTML/SCSS, WebSockets, REST APIs
- MySQL, SQLite, NoSQL Databases (MongoDB, Redis), Vector databases (FAISS, semantic search), Database Design
- WordPress, Moodle
- Docker & containerized deployments, Linux, Git
- CI/CD fundamentals, Microservices, Message Brokers & Queues (conceptual)
- UI/UX concepts, System Architecture Design, Design & Analytical Thinking, Research & Technical Analysis, Problem Solving.
- OpenGL, Verilog, VHDL, ModelSim, LTSpice, AutoCAD

PERSONAL PROJECTS

`kaipimaria.art`, `kaipimaria.com`, `kaipimaria.gr`

Designed and implemented multiple React and Next.js based personal web applications, with cloud deployment on Vercel, showcasing my artwork, my interactive web-based CV, and my athletic background.

Academic Tutoring Management System

Designed and implemented a Python-based application for an academic tutoring service, supporting student management, class scheduling, and instructor tracking, developed end-to-end as a **freelance project**.

Car Rental Web Application

Designed and developed a full-stack car rental web application with a Node.js back-end, MongoDB database, and a front-end built using Handlebars/CSS/JavaScript, supporting vehicle listings, rental management, and user interactions.

PERSONAL ACHIEVEMENTS

- 5 years in row Gold Medal winner at Para Table Tennis National Championship and member of the National Team of Greece (2021-present)
- 1 Bronze Medal at double-mixed at International Para Table Tennis Tournament at Argostoli, Greece (2023).
- First para-athlete to qualify and compete in the final stage of the Greek National Table Tennis Championship.