



ZYGOURIS FILIPPOS-PARASKEVAS

Healthcare AI Architect & Engineer |
End-to-End AI Solutions Expert

About me

With deep expertise in healthcare information systems, I connect business needs with advanced technical solutions, designing and delivering end-to-end AI systems in digital health. My passion for healthcare, AI, and information systems is complemented by strong business acumen, robust technical skills, and a track record of achievement through continuous learning and hands-on experience. I excel at leading projects to timely completion and developing innovative solutions that deliver real value in digital health.

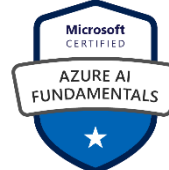
Education

- 2020 – present Department of Computer Engineering & Informatics, University of Patras | Grade 8.0/10
- 2017 – 2020 High school diploma | Grade 19.8/20

Achievements

- Scholarship program for advanced summer seminars:
UNBOUND PROMETHEUS DATA SCIENCE
Kavala, Greece (Jul 2022 - Aug 2022)
- Internship Experience: D-PBL Erasmus+
Leader of Analysis Team, Scrum Master and Software Engineer
Lisbon, Portugal (Remote) (Mar 2024 - May 2024)
- Event Experience: Startup Week Patras 2024
Volunteer Organizer & Participant
Patras, Greece (Oct 20–25, 2024)

Microsoft



- BETA Microsoft Learn Student Ambassador: Organizer & Speaker, Global (Remote) (Jul 2023 – May 2025)
- Microsoft Certified: Azure AI Fundamentals, (Feb 2023)

CISCO



- Credential of Networking Devices and Initial Config, (April 30, 2023)
- Badge of Networking Basics, (April 29, 2023)

Others



- Certificate: Elements of AI, (April 25, 2023)
- 8th Competition: Developed AI-driven CSR strategies aligned with the UN SDGs.

Technical Skills

Expert in Mathematics |

Probabilities, Statistics, Linear Algebra, Calculus

Programming | Python, C, MySQL, REST APIs, OpenAI API, CrewAI, LangGraph, MCP server

Data & AI | Data preprocessing, vector DBs, DL/CV/NLP, GNNs, GANs, LLMs, AI agents, XAI.

Cloud, DevOps & Data Centers | Azure, Linux, Docker, Kubernetes, databases, data lakes, GPU servers.

Networking | IP, BGP, DNS/DHCP, VLANs, SDN

Language

Greek

English

- LanguageCert C2 Mastery | ISESOL - IESOL

Soft Skills

Leadership
Entrepreneurship
Problem Solving
Work Ethic
Time Management
Adaptability

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Notable Trainings

- **Microsoft Ignite | Nov 16–18, 2023 & Nov 18–22, 2024:** Hands-on with Azure AI, data modernization, IoT, and cloud-native patterns (2023). Explored Copilot, autonomous agents, and Azure AI stack. Also attended Satya Nadella's keynote on generative AI (2024).
- **PwC "Break AI" Workshop | Nov 24, 2023:** Selected among 30 students for advanced training in AI risk management, tinyML, distributed AI, NVIDIA chip strategy, and OWASP security.
- **NVIDIA GTC 2023: Accelerated Computing & AI | Mar 21, 2023:** Explored generative AI, robotics, Industrial Metaverse, and hands-on DGX labs. Featured keynotes by Jensen Huang and leaders from OpenAI and DeepMind.
- **Microsoft Datacenter Experience: Virtual Tour | Jun 7, 2022:** Completed an interactive 3D tour of Azure datacenter design, AI accelerators (Maia, Cobalt), sustainability, and global operations.
- **Microsoft Envision Greece | Jun 29, 2022:** Engaged with digital leaders on transformation, post-pandemic acceleration, cybersecurity, and tech sustainability.

Remarkable Projects

■ Zenith Dx: Patient-Centric Multimodal Agentic CDSS on NVIDIA DGX

- As part of my diploma thesis, I architected and implemented ZenithDX, a patient-centric multimodal Clinical Decision Support System, delivering the complete solution from frontend, UI/UX to backend, database infrastructure. I developed an advanced ReAct & self-refine LLM agent with LangGraph, orchestrating hybrid image analysis (segmentation-based, multi-label classification), heterogeneous EHR graph modeling, FAISS-powered vector search, and web retrieval all deployed on a multi-GPU NVIDIA DGX cluster. This end-to-end system produces transparent, structured, and personalized diagnostic reports, significantly improving diagnostic accuracy and usability for real-time clinical decision-making in emergency care.

■ Multicloud AI Architecture for Personalized Cancer Detection

- My project seeks to transform cancer diagnosis by developing an advanced multicloud platform that integrates cutting-edge AI and machine learning techniques, including computer vision, radiomics, and natural language processing. This approach drives earlier detection, higher diagnostic precision, and more effective treatment planning. By advancing digital imaging and deploying modern technologies, the system delivers secure, scalable data management and comprehensive visualization of neoplastic lesions. Key contributions include enhanced diagnostic tools, personalized treatment pathways, and robust data security protocols. Looking forward, the project will address ethical considerations, real-time monitoring, and genomic data integration to further advance the field of oncology and improve patient outcomes.

■ Emerging Security Risks in Healthcare Cloud-Based Information Systems

- Conducted a comprehensive analysis of security challenges in cloud-based healthcare information systems, focusing on critical threats such as data breaches and DDoS attacks. Proposed and implemented effective solutions leveraging Azure technologies including Microsoft Entra ID, Azure Key Vault, and multi-factor authentication (MFA) to significantly enhance data protection and access management. Emphasized the necessity of a holistic, adaptive security strategy that integrates current best practices with emerging technologies to address the continuously evolving threat landscape. Ensured the confidentiality, integrity, and availability of sensitive healthcare data by adopting a proactive and resilient approach to cloud security.

Remarkable Projects

■ Advanced Bioinformatics Methods for Sequence Analysis

- Conducted a comprehensive investigation into bioinformatics algorithms and tools for biological sequence analysis. Explored and benchmarked resources such as GenBank, MEME Suite, EMBOSS Needle, FastQC, and Sequence Manipulation Suite for sequence alignment, motif discovery, and quality assessment. Compared alignment tools from both NCBI and EBI, implemented suffix tree data structures to optimize sequence operations, and developed methods for identifying repeated substrings and binding regions within DNA sequences. This work aimed to enhance biological data interpretation, streamline analytical workflows, and deliver customizable, efficient solutions for advanced bioinformatics research.

■ Synthetic Data Generation Using GANs

- Focused on the generation of realistic synthetic telecommunication activity data relevant to healthcare telemetry, this project employed a Wasserstein GAN with Gradient Penalty (WGAN-GP) neural network. The model was trained on anonymized data to learn the true statistical distribution and structural patterns of real-world data, transforming random noise into five key telecommunication activity features. The introduction of gradient penalty ensured the 1-Lipschitz condition, improving training stability and data fidelity. Evaluation utilized metrics such as MSE, Cosine Similarity, KL Divergence, variance, and coverage, demonstrating the high quality and diversity of generated samples. Notably, similar WGAN-GP techniques can be applied to produce synthetic medical images (e.g., X-rays), addressing data scarcity and supporting AI model training in healthcare environments with stringent privacy requirements.

■ Parallelized K-Nearest Neighbors for Next-Generation Healthcare Analytics

- This project optimizes the K-Nearest Neighbors (KNN) algorithm using parallel processing techniques to meet the demands of modern healthcare analytics. By leveraging multi-core architectures and distributed computing, the solution dramatically improves computational efficiency and scalability, enabling rapid analysis of large and complex medical datasets such as EHRs, genomic sequences, and medical images. This approach not only reduces processing times but also enables real-time, data-driven decision support in high-throughput clinical environments, ultimately enhancing patient outcomes and resource utilization.

■ Accessibility Enhancement for Deaf Travelers (DeafNav App)

- As Analysis Team Leader, Scrum Master, and Software Engineer, I led a diverse, multinational team from Portugal, Greece, Serbia, France, and Lithuania in developing DeafNav, an innovative application that empowers deaf and hard-of-hearing individuals to navigate metro and train stations independently and safely by integrating real-time sign language interpretation, audio-to-text transcription, live chat support, and visual alerts to address critical accessibility needs. This project was deeply meaningful to me, especially following the tragic train accident in Greece, which reinforced my commitment to advancing inclusive, user-centered transport solutions. My responsibilities included team organization, requirements analysis, and the orchestration of agile project management, software engineering, and stakeholder collaboration, while also supporting marketing and cross-functional leadership by applying advanced skills in creativity, innovation, and problem-solving to ensure the project's success.