

# Georgios Balaouras

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## Education

### Aristotle University of Thessaloniki, Thessaloniki, Greece

MEng in Electrical and Computer Engineering

Oct 2015 – Oct 2020 | **Grade:** 8.80

## Work Experience

### Machine Learning Engineer

*Kaizen Gaming*

Mar 2025 – Present

- Build a multi-agent AI system that analyzes millions of survey responses and chat transcripts to identify trends and automatically summarize customer experiences at scale.
- Develop Azure Databricks pipelines and FastAPI/NoSQL backend services to ingest, process, and serve large volumes of unstructured customer feedback data.
- Develop automated testing and evaluation pipelines for agentic and LLM-based systems to improve reliability before production deployment.

*EY Greece*

### Senior Data Scientist

Jun 2024 – Feb 2025

- Led the development of core components for an enterprise-scale Business Continuity Platform for a major energy company, supporting operational readiness and resilience.
- Designed scalable data pipelines in PySpark on Azure Databricks to process large volumes of operational data and enable near real-time insights.
- Developed high-performance REST APIs with FastAPI to integrate backend services with frontend applications.

### Data Scientist

Sep 2023 – Jun 2024

- Developed agentic AI assistants using OpenAI and AutoGen to automate workflows across use cases such as travel assistance, presentation-to-speech generation, and financial analysis.
- Implemented Retrieval-Augmented Generation (RAG) pipelines to improve knowledge grounding and response quality in enterprise LLM applications.
- Automated company valuation workflows for the Strategy and Transactions team, increasing efficiency by more than 30%.

### Deep Learning Engineer & Research Assistant

*Centre for Research & Technology Hellas (CERTH)*

Jan 2021 – Aug 2022

- Researched and developed deep learning models for image and video summarization using encoder-decoder architectures, attention mechanisms, and transformers in PyTorch.
- Improved video summarization training speed by 5x and model performance by 10%.
- Co-authored 4 peer-reviewed publications and 1 book chapter in multimedia understanding and video summarization. Contributed to EU-funded research projects, including MIRROR and AI4Media.

## Publications

*E. Apostolidis, G. Balaouras, V. Mezaris, I. Patras, "Explaining video summarization based on the focus of attention", Proc. IEEE Int. Symp. on Multimedia (ISM), Dec. 2022. [Publication Link](#)*

*E. Apostolidis, G. Balaouras, V. Mezaris, I. Patras, "Summarizing Videos Using Concentrated Attention and Considering the Uniqueness and Diversity of the Video Frames", ACM Int. Conf. on Multimedia Retrieval (ICMR), June 2022. [Publication Link](#)*

E. Apostolidis, G. Balaouras, V. Mezaris, I. Patras, "Combining Global and Local Attention with Positional Encoding for Video Summarization", *Proc. IEEE Int. Symposium on Multimedia (ISM)*, Dec. 2021. [Publication Link](#)

## Selected Projects

### Energy Consumption Analysis (Thesis) | [Project Link](#)

Apr 2020 – Oct 2020

- Developed an Android application to collect mobile phone energy consumption data for small-scale experimental analysis.
- Built a MongoDB-backed data pipeline for storing and retrieving time-series energy data and applied machine learning methods to analyze usage patterns and predict energy consumption.

### Pi Messenger | [Project Link](#)

Aug 2019 - Oct 2019

- Built a messaging system on Raspberry Pi devices using ad-hoc Wi-Fi networks.
- Implemented a multi-threaded TCP client-server application in C and used cross-compilation to optimize deployment on Raspberry Pi hardware.

Additional projects: [mpalaourg-astro.pages.dev/projects](https://mpalaourg-astro.pages.dev/projects) | [github.com/mpalaourg](https://github.com/mpalaourg)

## Technical Skills

**Programming Languages:** Python, R, SQL, Bash, C, Java

**ML / AI:** GenAI, LLMOps, Multi-agent Systems, Retrieval-Augmented Generation (RAG), Deep Learning, Natural Language Processing, Computer Vision, Reinforcement Learning

**Frameworks & Libraries:** PyTorch, scikit-learn, Pandas, NumPy, SciPy, PySpark, Databricks Asset Bundles, FastAPI, OpenAI API, AutoGen, LangChain/LangSmith

**Cloud, Data & Engineering:** Microsoft Azure, Azure Databricks, Data Pipelines, REST APIs, NoSQL, MongoDB, Git, Docker, Linux, CI/CD, Automated Testing, Data Structures, OOP

## Soft Skills

Cross-functional collaboration, Problem-solving, Ownership, Communication, Self-motivation, Time Management, Decision-Making, Willingness to learn and accept feedback

## Languages

- **Greek:** Native proficiency
- **English:** Professional working proficiency (C2)
- **German:** Basic (B1)

## Interests

- Keeping up to date with emerging technologies
- Raspberry Pi projects and experimentation
- Sports analytics, especially basketball and Formula 1
- Music: Harmony Diploma; instruments: accordion, percussion

## Additional Information

- Completed mandatory military service (Sep 2022 – Jun 2023)
  - **Honorary Distinction:** Lance Corporal
  - Led and managed a team of 10, strengthening leadership, teamwork, time management, decision-making, and conflict resolution
- Driving License: Category B
- Administrator of thmmy.gr, a digital student community with 7,000+ users