George Balaouras

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Education

Aristotle University of Thessaloniki
Electrical and Computer Engineer, MEng **Oct 2015 – Oct 2020**
Grade: 8.80

Work Experience

Deep Learning Engineer & Research Assistant
Centre for Research & Technology Hellas (CERTH) **Jan 2021 – Aug 2022**
Information Technologies Institute (ITI)
Part of the following EU-funded projects:

- MIRROR: Migration-Related Risks caused by misconceptions of Opportunities and Requirements
  - Research and development of image/video collection summarization and tagging techniques
  - Supervisor: Dr. Vasileios Mezaris, Senior Researcher Grade A
- AI4Media: A European Excellence Centre for Media, Society and Democracy
  - Research and development of image/video collection summarization and tagging techniques
  - Supervisor: Dr. Vasileios Mezaris, Senior Researcher Grade A

Publications

1. **E. Apostolidis, G. Balaouras, V. Mezaris, I. Patras,** "*Explaining video summarization based on the focus of attention*", Proc. IEEE Int. Symposium on Multimedia (ISM), Dec. 2022. DOI:10.1109/ISM55400.2022.00029 Publication link
2. **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), Newark, NJ, USA, June 2022. Publication link
3. **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. DOI:10.1109/ISM52913.2021.00045 Publication link

Projects

Video Summarization | *Python, PyTorch* | Project link **Jan 2021 – Aug 2022**

- Development of deep-learning network architectures for the summarization of videos and image collections
- Exploitation of different deep-learning approaches for supervised and unsupervised training, such as Adversarial Learning of Generator-Discriminator architectures, and Reinforcement Learning via Policy Gradient
- Utilization of several types of deep neural networks, such as CNNs, and RNNs/LSTMs, and network architectures, such as VAEs, GANs, and Transformers

Thesis | *Java, Flask, MongoDB, Python* | Project link **Apr 2020 – Oct 2020**

- Data collection and analysis of mobile phones' energy consumption using machine learning
- Development of the Android application BatteryApp
- Utilization of MongoDB for storing the produced documents
- Exploration of a variety of regression and clustering algorithms

Pi Messenger | *C, Raspberry Pi* | Project link **Aug 2019 – Oct 2019**

- Device configuration for exchanging messages, based on an ad-hoc Wi-Fi network
- Familiarization with Cross-compiling
- Implementation of a TCP Client-Server program
- Use of p-threads and mutexes

Optimization Algorithms | *MATLAB* | Project link **Apr 2018 – Jun 2018**

- Implementation of various optimization algorithms
- Minimization without an analytic function form
- Function minimization in the presence of constraints
- Development of a genetic algorithm to approach an unknown continuous function

More projects at GitHub.

Technical Skills

Programming Languages:	Python, R, Bash, C
Frameworks:	PyTorch, scikit-learn, NumPy, Pandas, SciPy
Miscellaneous:	Data Structures, (No)SQL databases, Version Control

Soft Skills

Teamwork	Self-motivation
Time Management	Problem-Solving
Decision-Making	Willingness to learn and accept feedback

Languages

Greek	Proficiency, Native
English	Proficiency, C2
German	Basic, B1

Activities

- Keeping up with the latest technological news and achievements
- Exploring the capabilities of Raspberry Pi
- Watching and talking about sports, especially Basketball and F1
- Music: Harmony Diploma ~ Instruments: Accordion, Percussion

Volunteering

Managing the digital student community, thmmy.gr (Administrator)

Miscellaneous

Fulfilled military service **Sep 2022 – Jun 2023**

Driving license – Category B