

# George Balaouras

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## Education

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### Aristotle University of Thessaloniki

Electrical and Computer Engineer, MEng

Grade: 8.80

Oct 2015 – Oct 2020

## Work Experience

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### Deep Learning Engineer & Research Assistant

Centre for Research & Technology Hellas (CERTH)

Information Technologies Institute (ITI)

Part of the following EU-funded projects:

Jan 2021 – Aug 2022

- 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

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1. **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](#)
2. **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

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### 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

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

## Soft Skills

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

## Languages

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

## Activities

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- 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

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