Antonios Tragoudaras

⌂ https://antragoudaras.github.io/ | ⚙ antragoudaras | in Antonios-Tony-Tragoudaras | ᴿᴳ Antonios-Tragoudaras

Education

University of Amsterdam (UvA)   *Amsterdam, Netherlands*

MSc in Artificial Intelligence (Informatics Institute)   Aug. 2023 - Present

GPA: 8.25/10 - In track to graduate with cum-laude (highest distinction).

King Abdullah University of Science and Technology (KAUST)   *Jeddah, Saudi Arabia*

Ph.D. Student in Electrical and Computer Engineering   Aug. 2022 - Aug. 2023 (Deliberately Dropped out)

GPA: N/A, 24 Credits - Doctoral Dissertation Research.

University of Thessaly   *Volos, Greece*

BEng in Electrical & Computer Engineering (5-years studies; 300ECTS)   Sep. 2016 - Nov. 2021

GPA: 7.88/10, Thesis Grade: 10/10, Supervisor: Prof. George Stamoulis.

Research Experience

Physics Based Dynamics   *University of Amsterdam (UvA)*

Master thesis research project - ELLIS MSc Honors Student. Main Advisor: Professor Efstratios Gavves, ELLIS
co-advisor: Francesco Locatello   Jan. 2025-Present

Duties/Tasks:
- Extending a previous research project (Learning Physics from video) into my master's thesis, focusing on integrating object-centric representations for improving the controllability of Video Generation Models (VGMs), and transitioning from VGMs to compositional world-models.

Side-Goals:
- Publish my research in a renowned AI venue (NeurIPS, ICML, etc.).

Learning Physics from Videos   *University of Amsterdam (UvA)*

Research Project led by Associate Professor Efstratios Gavves is part of a larger research effort aimed at evaluating the
current capabilities of video generation models, like OpenAI-SORA, in understanding real-world phenomena.   Jul.2024-Present

Duties/Tasks:
- Evaluating video-generation-models (VGMs) as real-world simulators.
- Identify the limitations of current models and enhance the physical consistency of generated videos.

Visual Perception for Autonomous Vehicles - Brightskies Inc.   *External Collaboration*

Remote Collaboration, monitored by Mahmoud Serour (Autonomous Driving Team Lead) and Mohamed Ezzat
(Perception Engineer). Collaboration Initiated by Research Scientist Hakim Ghazzai (AI Team Lead of our research   Mar.2023-Jun.2023
group).

Duties/Tasks:
- Combining methods for better Representation Learning and Early Fusion of the sensor data modalities used in autonomous cars, targeting to acquire better accuracy in downstream Computer Vision tasks.
- Multi-Task Learning Hydra network with multiple heads, each corresponding to a different downstream task, to achieve real-time performance on computationally constrained systems.

Neural Architecture Search, Meta-Heuristic Optimization, Transformers for brain signal decoding   *King Abdullah University of Science and Technology (KAUST)*

Ph.D. Student, supervised by Postdoc Fellow Charalampos Antoniadis   Sep. 2022 - Feb.2023

Journal Publications:
- Enhancing DNN models for EEG/ECoG BCI with a Novel Data-Driven Offline Optimization Method (IEEE Access)

Paper Publications:
- Data-Driven Offline Optimization of Deep CNN Models for EEG and ECoG Decoding (ISCAS'23)

AutoML, Efficient Deep Learning Techniques, and Voice Activity Detection   *VSPR - KAUST*

Visiting Student Research Intern, mentored by Postdoc Fellow Charalampos Antoniadis   Feb. 2022 - Jul. 2022

Paper Publications:
- TinyML for EEG Decoding on Microcontrollers (ISCAS'23)
- Audio-visual Speaker Diarization: Improved Voice Activity Detection with CNN based Feature Extraction (MWSCAS'22)

Accelerating Inference of Deep Neural Networks on FPGAs *University of Thessaly*

Undergraduate Researcher, mentored by Prof. George Stamoulis and Postdoc Fellow George Floros Jul. 2021 - Jan. 2022

Journal Publication:

- Design Space Exploration of a Sparse MobileNetV2 Using High-Level Synthesis and Sparse Matrix Techniques on FPGAs (MDPI Sensors'22)

Publications

Full list is available at [Google Scholar](#)

[1] **Antonios Tragoudaras**, Charalampos Antoniadis, Yehia Masoud. "Enhancing DNN models for EEG/ECoG BCI with a Novel Data-Driven Offline Optimization Method," in *IEEE Access, vol. 11, pp. 35888-35900, 2023*, doi: 10.1109/ACCESS.2023.3265040

[2] **Antonios Tragoudaras**, Charalampos Antoniadis, Yehia Masoud. "TinyML for EEG Decoding on Microcontrollers," in *2023 IEEE 56th International Symposium on Circuits and Systems (ISCAS)]*

[3] **Antonios Tragoudaras**, Pavlos Stoikos, Konstantinos Fanaras, Athanasios Tziouvaras, George Floros, Georgios Dimitriou, Kostas Kolomvatsos, Georgios Stamoulis. "Design Space Exploration of a Sparse MobileNetV2 Using High-Level Synthesis and Sparse Matrix Techniques on FPGAs," in *MDPI Sensors 22, no. 12: 4318]*, doi:10.3390/s22124318

[4] Konstantinos Fanaras, **Antonios Tragoudaras**, Charalampos Antoniadis, Yehia Masoud. "Audio-visual Speaker Diarization: Improved Voice Activity Detection with CNN based Feature Extraction," in *2022 IEEE 65th International Midwest Symposium on Circuits and Systems (MWSCAS), Fukuoka, Japan, 2022, pp. 1-4*, doi: 10.1109/MWSCAS54063.2022.9859533

Awards and Honors

Dec. 2024 - Present	**ELLIS MSc Honours Program**: Award and funding for excellent MSc students to conduct their thesis under their joint supervision of UvA ELLIS unit at an ELLIS partner institution outside of the Netherlands.	*UvA IvI*
Aug. 2022- Aug. 2023	**KAUST Graduate Fellowship**: Full tuition support, living allowance, housing, and medical coverage.	*KAUST*

Teaching Experrience

Graduate Teaching Assistant at UvA's MSc AI Program *UvA, Amsterdam, Netherlands*

Assisted in teaching graduate-level (first-year) courses by making sure students understood the material, answering their questions, creating assignments, giving feedback, and grading exams. Aug. 2024 - Present

Courses:

- Computer Vision 1 (MSc AI) (Aug. 2024 - Oct.2024)
- Deep Learning 1 (MSc AI) (Oct. 2024- Dec.2024)
- Fairness, Accountability, Confidentiality & Transparency in AI (MSc AI) (Jan. 2025 - Feb. 2025)