

Antonios Tragoudaras

🏠 <https://antragoudaras.github.io/> | 🌐 antragoudaras | 📄 Antonios-Tony-Tragoudaras | 📧 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 (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 **Efstathios Gavves**, ELLIS

Jan. 2025-Present

co-advisor: **Francesco Locatello**

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 **Efstathios 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 group).

Mar.2023-Jun.2023

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

Undergraduate Researcher, mentored by Prof. George Stamoulis and Postdoc Fellow George Floros

University of Thessaly

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 Experience

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)