Agelos Kratimenos

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Senior Student at Computer Engineering | Machine Learning & Intelligent Systems

EDUCATION

National Technical University of Athens (NTUA), Greece *09/2015 - 06/2020*
BSc & MSc in Electrical and Computer Engineering (5-year joint degree; 300 ECTS)

- GPA: 9.6/10 (top 1%)
- Concentration: Signal, Control Systems and Robotics & Software Systems & Computing Systems
- Master's Thesis on "3D Body, Face and Hands Reconstruction with applications on Sign Language Recognition", supervised by professor Petros Maragos and co-adviced by Berkeley Postdoctoral Georgios Pavlakos. Grade 10/10.

1st Senior High School of Vyronas, Athens *09/2012 - 06/2015*

- High School Diploma: 19.5/20 (Valedictorian)
- Nationwide University Entrance Examination score: 19,359/20,000 (top 1% nationwide)

PROFESSIONAL AND RESEARCH EXPERIENCE

Undergraduate Research Assistant, Control Systems Lab (Prof E.Papadopoulos), NTUA *08/2019 - Current*

- Currently working on creating a robust and portable real-time robotic system for identifying grape clusters in a vineyard or the HexaTerra Legged Robot; a modular stepping locomotion system.
- Working with Mask-RCNN and Yolo-v3 state-of-the-art models for Semantic Segmentation and Cycle GANS for applying de-raining methods.
- Gained extensive collaborative experience by working on a large-scale project, communicating code between the team and having weekly calls to report work progress. Our work [1] was submitted on ICRA 2021.

Undergraduate Research Assistant, CVSP Lab, NTUA *07/2019 - 02/2020*

- Worked on mixing methods to augment a monophonic dataset through tempo-sync, pitch-sync and genre mixing to classify instruments in polyphonic music with convolutional networks. Our work [5] is accepted in EUSICPO 2020.
- Worked on parallel convolutional and recurrent networks with residual connections which achieve dominant performance, comparable to spectrogram-based models. Our work [3] is submitted to ICASSP 2021.
- Completed my Master's Thesis by diving deeply into the Computer Vision field, 3D Body Reconstruction techniques, multi-stream information and big datasets. Our work [2] is submitted on ICASSP 2021, while our work [4] is accepted in the ECCV 2020 Workshop. The thesis will be completed in December with a final submission on the Pattern Analysis and Machine Intelligence (PAMI) Journal.

Summer Robotics Project, Intelligent Robotics and Automation Laboratory, NTUA *05/2019 - 09/2019*

- Initialized from a project in Intelligent Robotic Systems course, in which we implemented Wall Following and Localization task for a sonar robot and tested in Gazebo Simulation with ROS.
- Extended the project by testing our algorithms under real conditions with a three-wheel DC-motor sonar robot.

Private Tutor, Athens *09/2015 - Current*

- Tutored 5 struggling students in Mathematics, Physics and Programming for Junior and Senior High School.
- Prepared one student in Mathematics for the Nationwide University Entrance Examination.
- Tutored one dyslectic student for 4 years increasing his performance.

HONORS AND AWARDS

€500 Award from Vyronas Mayor for succeeding in the Nationwide University Entrance Examination (first in region).
€800 Award from Eurobank for succeeding in the Nationwide University Entrance Examination (first in High School).
Financial Awards in years 2016 and 2017 from National University of Athens for achieving the highest grades in Mathematics courses in the freshman and sophomore year.

PUBLICATIONS

[1] **Agelos Kratimenos**, Athanasios Mastrogeorgiou, Konstantinos Machairas, Konstantinos Koutsoukis, and Evangelos Papadopoulos, "Robust Visual Servoing for Precision Agriculture Task susing Learning and De-rain Image Recovery via GANs", ICRA 2021 (submitted)

[2] **Agelos Kratimenos**, Georgios Pavlakos and Petros Maragos, "Independent Sign Language Recognition with 3D Body, Hands, and Face Reconstruction", ICASSP 2021 (submitted)

[3] Kleanthis Avramidis*, **Agelos Kratimenos***, Christos Garoufis, Athanasia Zlatintsi, and Petros Maragos, "Deep Convolutional and Recurrent Netwroks for Polyphonic Instrument Classification from Monophonic Raw Audio Waveforms", ICASSP 2021 (submitted)

[4] **Agelos Kratimenos**, Georgios Pavlakos and Petros Maragos, "3D Hands, Face and Body Extraction for Sign Language Recognition", ECCV Workshop 2020 (SLRTP)

[5] **Agelos Kratimenos**, Kleanthis Avramidis, Christos Garoufis, Athanasia Zlatintsi,and Petros Maragos, "Augmentation Methods on Monophonic Audio for Instrument Classification in Polyphonic Music", EUSIPCO 2020

[6] **Agelos Kratimenos**, "Proof of the Collatz Conjecture", arXiv:1911.02400, 2019 (not published)

STRENGTHS AND SKILLS

Technical	Python, Computer Vision (CNN, LSTM, GANS, Semantic Segmentation, Mask-RCNN, Yolo-v3) TensorFlow/Keras, Paper Re-implementation, C/C++, LaTeX, Matlab
Extra-Curricular	Music Theory (Grade 7 equivalent), Piano, Electric Guitar

LANGUAGES

English (fluent), **German** (intermediate), **Greek** (native)