Alexandros Delitzas

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Education

ETH Zurich — Zurich, Switzerland
Master of Science in Computer Science — Sep. 2021 - Jan. 2024

- Specialization: Machine Intelligence
- Expected grade: 5.52/6.00

Aristotle University of Thessaloniki (AUTh) — Thessaloniki, Greece
5-year Diploma in Electrical and Computer Engineering (equivalent to joint BSc/MEng) — Sep. 2014 - Apr. 2020

- Thesis: "Understanding website aesthetics using deep learning"
- Grade: 9.36/10.00 (*Excellent*), Ranking: 4^{th} out of 369 (Top 1%)

Research Experience

Computer Vision and Geometry Group, ETH Zurich — Zurich, Switzerland
Master thesis — May 2023 - present

- Working on functionality and affordance understanding in 3D scenes towards functional 3D replicas
- Created a lightweight web-based framework that enables the fine-grained semantic annotation of high-resolution 3D point clouds
- Supervised by Francis Engelmann and Prof. Marc Pollefeys

Data Analytics Lab, ETH Zurich — Zurich, Switzerland
Research project — Feb. 2023 - May 2023

- Worked on 2D/3D vision+language pre-training methods for visual reasoning downstream tasks in 3D scenes
- Supervised by Sotiris Anagnostidis, Gregor Bachmann and Prof. Thomas Hofmann

Computer Vision Lab, ETH Zurich — Zurich, Switzerland
Semester thesis — Sep. 2022 - Feb. 2023

- Worked on diffusion models for the task of 3D Mesh Deformation Transfer
- Supervised by Hao Tang, Prof. Radu Timofte and Prof. Luc Van Gool

Intelligent Systems and Software Engineering Labgroup, AUTh — Thessaloniki, Greece
Undergraduate research assistant — Feb. 2019 - Feb. 2020

- Developed "Calista", a deep learning powered engine which automatically measures the aesthetics of a webpage requiring only a URL as an input
- Developed deep learning models for webpage aesthetics assessment which present high correlation to human perception
- Developed a web app to collect data through pairwise image comparisons via crowdsourcing and introduced a novel dataset on webpage aesthetics
- Supervised by Prof. Andreas Symeonidis

Automation and Robotics Lab, AUTh — Thessaloniki, Greece
Software Developer / Human-Robot Interaction at ARIADNE Robotics team — Oct. 2016 - Nov. 2017

- Developed an AR-enhanced Graphical User Interface providing an intuitive solution for a non-expert user to operate an industrial robotic arm in a dynamic environment (Tech stack: Qt, ROS, C++)
- Supervised by Prof. Zoe Doulgeri

Publications

* indicates equal contribution

1. **A. Delitzas**, A. Takmaz, F. Tombari, R. Sumner, M. Pollefeys, F. Engelmann, "SceneFun3D: Fine-Grained Functionality and Affordance Understanding in 3D Scenes", Under Review.
2. **A. Delitzas***, M. Parelli*, N. Hars, G. Vlassis, S. Anagnostidis, G. Bachmann, T. Hofmann, "Multi-CLIP: Contrastive Vision-Language Pre-training for Question Answering tasks in 3D Scenes", British Machine Vision Conference (BMVC), 2023. (**Oral presentation**)
3. M. Parelli*, **A. Delitzas***, N. Hars, G. Vlassis, S. Anagnostidis, G. Bachmann, T. Hofmann, "CLIP-Guided Vision-Language Pre-Training for Question Answering in 3D Scenes", Conference on Computer Vision and Pattern Recognition Workshops (CVPRW), 2023.
4. **A. Delitzas**, K. Chatzidimitriou, A. Symeonidis, "Calista: A deep learning-based system for understanding and evaluating website aesthetics", International Journal of Human-Computer Studies, 2023.
5. C. Kechris*, **A. Delitzas***, V. Matsoukas*, P. Petrantonakis, "Removing Noise from Extracellular Neural Recordings Using Fully Convolutional Denoising Autoencoders", International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), 2021.

Work Experience

COVID-19 Response Greece — Thessaloniki, Greece
Coordinator of the project "Data Analytics" (volunteer) — Mar. 2020 - Nov. 2021

- Spearheaded the development of "Greece Coronavirus API", the first publicly available API providing real-time data on the spread of COVID-19 in Greece for public use (utilized for research purposes by Greek universities and for monitoring purposes by regional governments)
- Led a team of 20 volunteers consisting of data scientists and developers
- Collaborated with several research labs on projects aiming to develop exploratory data analysis tools (among them "CovidDEXP", "OpenDataRef")

Entersoft S.A. — Thessaloniki, Greece
Consultant - Services Department (internship) — Jul. 2017 - Aug. 2017

- Analyzed customers' needs and built customized Business Intelligence solutions to meet their requirements
- Developed a desktop app which facilitates the management of Microsoft Azure Blob Storage (Tech stack: Qt, C++)

Selected Projects

Self-Stylization and Multi-scale Feature Learning for Road Segmentation — Jul. 2022
Project of the course "Computational Intelligence Lab"

3D Human Pose and Shape Estimation from RGB images — Jun. 2022
Project of the course "Machine Perception"

X-COVID AI Assistant — Jun. 2020
A Web Application to detect signs of COVID-19 presence from Chest X-Rays using Deep Learning

- Key achievement: Distinguished as one of the top-16 among 130 proposals by the national **#CovidHackGR hackathon** which was organized by the **Greek Ministry of Digital Governance**

Honors

- Scholarship grants from *Hellenic Petroleum S.A.*, *John S. Latsis Public Benefit Foundation* and *Bodossaki Foundation* to fund my MSc studies. — Jul. 2021
- Honored by the **President of Greece** for my volunteering contribution through technological innovations against the COVID-19 pandemic — Jul. 2020
- Graduated with *Honors* – Ranked among the *Top 1%* of the class — Apr. 2020

Invited Talks

- *Keynote Speaker* at the Electrical and Computer Engineering Student Conference of Greece (ECESCON 12). Topic: "Open Data in the fight against COVID-19" Apr. 2021

Skills

- **Programming/Scripting languages:** Python, C/C++, JavaScript, Matlab, Java, R
- **Machine Learning/Computer Vision:** Pytorch, keras, scikit-learn, numpy, OpenCV, Open3D, MeshLab, Blender
- **Web Development:** MERN stack (MongoDB, Express, React, Node.js), Three.js, HTML, CSS, REST API modelling
- **Databases:** SQL language, MySQL, MongoDB
- **Parallel Programming:** CUDA, pthreads, MPI

Languages

- **Greek:** native
- **English:** fluent (C2)
- **German:** intermediate (B1)