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Octave Mariotti

I am a postdoctoral researcher in computer vision and machine learning. My research interests span learning without human annotations, leveraging 3D cues for deep image models, and robustness in ML pipelines, especially in their evaluation.

Employment

2022-present **Post-Doctoral Research Associate**, *Edinburgh University*, Edinburgh, United Kingdom
Leveraging 3D priors for semantic correspondence. Working in the VICO computer vision team under Hakan Bilen, co-supervised by Oisín Mac Aodha

Education

- 2018-2022 **PhD**, *Edinburgh University*, Edinburgh, United Kingdom, Computer Science
Thesis: Unsupervised category-level viewpoint estimation
Advisor: Hakan Bilen
Exploration and design of approaches to predict 3D viewpoint for any instance of an object category, using only a collection of images as input
- 2017-2018 **Msc**, *Sorbonne Université*, Paris, France, Computer Science
Master DAC – Data, Learning, Knowledge
- 2015–2017 **Msc with honors**, *ENS de Lyon*, Lyon, France, Computer Science
Theoretical computer science
- 2016 **Msc**, *Uppsala Universitet*, Uppsala, Sweden, Computer Science
Exchange student in the Erasmus Programme
- 2014–2015 **Bsc**, *ENS de Lyon*, Lyon, France, Computer Science
Theoretical computer science
- 2012–2014 **CPGE**, *Lycée Saint-Louis*, Paris, France
Two years of intensive training in mathematics, physics and computer science to prepare for various competitive exams, notably to gain admission in engineering schools. Equivalent to first two years of bachelor.

Academic Experience

Reviewing, CVPRx2, ICCVx1, Pattern Recognitionx2, Pacific Graphicsx1

- 2021 **Teaching Assistant**, *Edinburgh University*
Principal TA for the 4th year undergraduate course *Machine Learning Practical*. Duties involved designing the courseworks and labs and answering student questions on the course discussion forum
- 2020 **Teaching Assistant**, *Edinburgh University*
Principal TA for the 4th year undergraduate course *Introductory Applied Machine Learning*. Duties involved designing the courseworks
- 2018, 2019 and 2021 **Project Tutor**, *Edinburgh University*
Weekly meetings with students for tutoring their semester-long research project for the *Machine Learning Practical* course, worth 10 ECTS

2019 **Lab Demonstrator**, *Edinburgh University*
Weekly lab sessions for the *Machine Learning Practical* course

Interships

- 2018 **Research Internship**, *Semi-supervised event detection and segmentation of audio scenes*, MLIA team, LIP6 laboratory, Paris, France
Exploration and adaptation of state-of-the-art computer vision models to audio scenes
- 2017 **Research Internship**, *Physical Neural Networks : Description Language & Noise Simulation*, Émeraude team, CRISAL laboratory, Lille, France
Associate developer of the N2S3 simulator: creation of a description language for spiking neural networks, development of a noisy hardware neuron model
- 2015 **Research Internship**, *Tilings and their applications to computability theory*, Escape team, LIRMM, Montpellier, France
Theoretical study of two-dimensional tilings and their periodicity

Awards

2022 **School of Informatics Staff Award**, *Edinburgh University*

Publications

Improving Semantic Correspondence with Viewpoint-Guided Spherical Maps, *Octave Mariotti, Oisín Mac Aodha and Hakan Bilen*, CVPR 2024 (oral)

GeoGen: Geometry-Aware Generative Modeling via Signed Distance Functions, *Salvatore Esposito, Qingshan Xu, Kacper Kania, Charlie Hewitt, Octave Mariotti, Lohit Petikam, Julien Valentin, Arno Onken and Oisín Mac Aodha*, Generative Models for Computer Vision (CVPR Workshop) 2024

Explicit Neural Surfaces: Learning Continuous Geometry With Deformation Fields, *Thomas Walker, Octave Mariotti, Amir Vaxman and Hakan Bilen*, NeuReps (NeurIPS Workshop) 2023

ViewNeRF: Unsupervised Viewpoint Estimation Using Category-Level Neural Radiance Fields, *Octave Mariotti, Oisín Mac Aodha and Hakan Bilen*, BMVC 2022

ViewNet: Unsupervised Viewpoint Estimation From Conditional Generation, *Octave Mariotti, Oisín Mac Aodha and Hakan Bilen*, ICCV 2021

Semi-supervised viewpoint estimation with geometry-aware conditional generation, *Octave Mariotti and Hakan Bilen*, 6DoF object pose estimation (ECCV Workshop) 2020

Exploring deep vision models for acoustic scene classification, *Octave Mariotti, Matthieu Cord and Olivier Schwander*, DCASE 2018