Luca Drole

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Education

Sept 2023	**M.Sc. Biomedical Engineering - Biomedical Imaging Major**, *ETH Zürich* ○ Excellence Scholar 2023 (ESOP)
Sept 2020 – Jul 2023	**B.Sc. Biomedical Engineering**, *Polytechnic University of Milan*, *110 cum Laude* ○ Course Representative, Student Research at NECSTLab.
2015–2020	**Scientific Lyceum**, *L.S. Oberdan*, Trieste, *100 cum Laude*

Research Experience

Mar 2025	**Visiting Student**, *A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital & Harvard Medical School* Working on contrast agnostic MRI feature extraction at LEMoN Lab under the supervision of Dr. Peirong Liu and Dr. Xiaoling Hu.
Feb 2024 - Jun 2024	**Semester Project**, *ETH Zürich* Title: *"Unsupervised Image to Scar Segmentation Transformation using a CycleGAN"* Worked with a Cycle-GAN paradigm to automate cardiac scar segmentation. Project at the CMR Group, under the supervision of I.Margolis and Dr. L. Dal Toso.
Feb 2023 – Jul 2023	**Bachelor's Thesis Student**, *NECSTLab, PoliMi* Title: *"Segmentation of cell nuclei from histopathological Images"*. Developed a novel loss function for the Hover-Net architecture to compensate for class imbalance. Worked with PyTorch and other popular libraries. Supervised by I.Poles and Dr. E. D'Arnese. github
Nov 2022 – Jun 2023	**Research Intern**, *Polyclinic Hospital Milan - Polytechnic University of Milan* Multimodal analysis of EEG-fMRI data from patients with Major Depressive Disorder. Supervised by Professor E. Maggioni.
Jul 2022– Sept 2022	**Amgen Scholar - Research Intern**, *ETH Zürich* Fully funded research internship at the Laboratory for Movement Biomechanics.I worked on automating pose estimation of joint implants from moving fluoroscopy videos, employing image processing techniques and deep learning (PyTorch). Supervised by Dr. Florian Vogl.

Conference Papers

[1] Luca Drole, Isabella Poles, Eleonora D'Arnese, and Marco D Santambrogio. Towards a lightweight 2D U-Net for accurate semantic segmentation of kidney tumors in abdominal CT images. In *IEEE EUROCON 2023 International Conference on Smart Technologies*, 2023.

Other Experience

Sept 2024 - Feb 2025	**Teaching Assistant**, *ETH Zürich* ○ TA for the "Programming for Engineers" and "Biomedical Imaging" courses. Responsible for grading, presentations, student support and updating the lecture material.

Oct 2020 – Nov 2022	**Junior Board Member for Fundraising**, *European Youth Parliament Italy*
	EYP Italy is a youth-led organisation that involves more than 800 students yearly in educational events.
	○ Involved in the association's governance, managed relations with partners and patrons, grants applications, supported event planning and on-site management.
Jan 2021– Nov 2021	**Project Manager**, *European Youth Parliament Italy*, Trieste
	○ Organized a four-day simulation of the European Parliament, with the theme: "Rethinking the future of Europe: Unity for a More Integrated Society"

Awards

March 2025	**Nova Italy 111 Students List**
Sept 2023	**Excellence Scholarship**, *ETH Zürich*
Sept 2022	**Runner-up Best Poster Prize**, *Amgen Scholars European Symposium*, Cambridge University
Jan 2022	**Best Freshmen Award**, *Polytechnic University of Milan*
Aug 2020	**National Excellence Honours Roll**, *Italian Ministry of Education*

Volunteering and Organisations

Apr 2018 - Present	**European Youth Parliament**
	Experienced peer-to-peer educator, facilitator, and facilitator trainer, team leader. Directed several policy discussion groups on a variety of topics around EU legislation. Relevant focus on EU Health policy. Volunteered at around 30 educational events across Europe.

Certifications

IELTS Academic 8.5

Computer skills

Good	Python, Pytorch
Intermediate	Tensorflow, Matlab, git, LaTeX
Basic	R, C, Solidowrks

Languages

Native	Italian
C2	English
A2	German