Daniele Falcetta *Doctoral Researcher, 3rd-Year-PhD Candidate*

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Publications EU Citizen ORCiD

Profile

3rd-year PhD Candidate with expertise in Deep Learning, 3D Medical Imaging, and Computer Vision. Research focused on interpretable and informative data selection, collaborative dataset infrastructure, and clinical translation for **Brain Vessel Segmentation** with proven real-world impact. Demonstrated success in international collaborations and multi-institutional projects, with research presentations at global venues, including two **MICCAI 2025 Early Acceptances** (Best 9%) and real-world clinical research translation.

Education

Doctor of Philosophy, PhD, Sorbonne Université, Eurecom 2023 – 2026 | Biot, FR
- **Thesis:** Annotation-Efficient Selection and Collaborative Datasets for Clinical Translation in Brain Vessel Segmentation
- **Supervisor:** Maria A. Zuluaga

MSc. Data Science, EURECOM Institute 2021 – 2023 | Biot, FR
- **18-months Double Degree** Mobility program

MSc. Data Science and Engineering, Politecnico di Torino 2020 – 2023 | Turin, IT
- **Thesis:** Analyzing Advanced Code Representations with Machine Learning

BSc. Biomedical Engineering, Politecnico di Torino 2017 – 2020 | Turin, IT
- **Thesis:** AI Application in Healthcare

Publications

D. Falcetta, et al. "One-shot active learning for vessel segmentation." *MICCAI 2025, 28th International Conference on Medical Image Computing and Computer Assisted Intervention*. (**Early Acceptance** - Best 9%)

D. Falcetta, et al. "VesselVerse: A Dataset and Collaborative Framework for Vessel Annotation." *MICCAI 2025, 28th International Conference on Medical Image Computing and Computer Assisted Intervention*. (**Early Acceptance** - Best 9%)

Galati, F.*, **Falcetta, D.,*** Cortese, R., Prados, F., Burgos, N., & Zuluaga, M. A. (2025). Multi-Domain Brain Vessel Segmentation Through Feature Disentanglement. *Machine Learning for Biomedical Imaging*, *3*, 477–495. ISSN 2766-905X.

E. Poeta, L. Vargas, **D. Falcetta**, V. Marciano et al. "Divergence-Aware training with automatic subgroup-mitigation for breast tumor segmentation."MICCAI 2nd Deep Breast Workshop on AI and Imaging for Diagnostic and Treatment Challenges in Breast Care (2025).

F. Galati, **D. Falcetta,** et al. "A2V: A semi-supervised domain adaptation framework for brain vessel segmentation via two-phase training angiography-to-venography translation." *34th British Machine Vision Conference (BMVC) 2023*.

J.O. Cleary, L.S. Canas, M.A. Zuluaga, **D. Falcetta**, et al. "Initial Analysis of Intracranial MR Angiography from the TwinsUK Large Cohort Twin Imaging Study." Annual British Society of Neuroradiologists' Meeting (BSNR)2025.

K. Yang, F. Musio, Y. Ma, ... , **D. Falcetta**, et al. "Benchmarking the CoW with the TopCoW challenge: Topology-aware anatomical segmentation of the Circle of Willis for CTA and MRA." ArXiv (2024): arXiv-2312

Experience

EURECOM Institute, Doctoral Research 2023 – Present | Biot, FR
- Deep Learning Models for **Multi-Institute Collaboration** and **Annotations Reduction** in 3D Brain Vessel Segmentation

SAP Labs, Research Internship - Master Thesis 2022 – 2023
- **MultiPath2Vec:** an attention-based model for security **Vulnerability Detection** in **Code Commits**

Leadership & Teaching

Co-Organizer, TopBrain MICCAI 2025 Challenge 2024 – 2025

Research Dissemination, World AI Cannes Festival (WAICF) 2024 – 2025

Teaching Assistant, MALIS Course and Labs @ EURECOM 2023 – Present

Awards

Mobility Scholarship Winner, 18-months Double MSc. Degree @ EURECOM 2021

Academic Scholarship Winner, During MSc. @ Politecnico di Torino 2020

Young Talents, Honors Program for Top 1% students @ Politecnico di Torino 2017