VRIJE UNIVERSITEIT BRUSSEL

Postdoc Position in Explainable Foundation Models for Medical AI

We invite applications for a fully-funded postdoctoral researcher within the newly-awarded imec.icon project "Learning by Explaining Multimodal Medical AI (LEMMA)".

Why trustworthy medical AI?

Deep models already outperform humans on many benchmarks, yet in the clinic they remain black boxes: radiologists cannot see why an algorithm flags a lesion, and AI engineers cannot tell when a model drifts out of distribution. LEMMA tackles these bottlenecks head-on. By fusing vision-language foundation models, visual & natural-language explanations, and out-of-distribution (OOD) detection, we will make AI for medical imaging transparent, robust and data-efficient.

Position Overview

As a postdoctoral researcher, you will forge next-generation explainable medical foundation models. You will disrupt today's most vibrant research frontiers:

- Embed model-based AI into self-supervised pre-training pipelines
- Finetune multimodal deep learning models that answer diagnostic questions about X-ray & CT
- Extend saliency, CAM and LLM-generated natural-language explanations to multi-image, multi-modal inputs
- Validate on real-world datasets from consortium partners in neuro-MR, digital pathology, dental X-ray, and PET/CT

You will:

- Publish in MICCAI, CVPR/ECCV, NeurIPS/ICLR and leading journals (T-MI, MedIA, T-PAMI).
- Work together with top international companies and top EU labs.
- Mentor PhD/MSc students and help steer project deliverables.
- Deploy demonstrators on clinical workstations.

Required Qualifications:

- PhD in Computer Science, Electrical Engineering, Biomedical Engineering, or related field.
- Solid grounding in deep learning and computer vision.
- First-author publications in venues such as CVPR, NeurIPS or leading journals.
- Proficiency with PyTorch / TensorFlow; strong coding & analytical skills.
- Genuine interest in foundation models, explainable AI, OOD detection.
- Excellent written and spoken English.

Nice-to-Haves

- Prior work on explainable AI, vision-language models, or medical imaging
- Experience with clinical datasets.

Offer:

- Postdoctoral contract (renewable per year) at ETRO-IMS, Vrije Universiteit Brussel (VUB)—an imec research group.
- Competitive salary, hospital insurance, transport coverage & generous leave.
- Daily collaboration with a multidisciplinary team in AI, radiology, and signal processing.
- Access to cutting-edge GPU infrastructure and imec's ecosystems.
- Budget for conferences, specialised training and broad networking.

Workplace: VUB Etterbeek campus, Pleinlaan 2, 1050 Brussels, Belgium.

About ETRO-VUB:

ETRO, the Department of Electronics and Informatics (http://www.etrovub.be/) of the Vrije Universiteit Brussel (VUB), performs fundamental and applied research in signal processing, AI, computer vision, NLP, electronics, and computing. We are a member of imec, the world-leading research and innovation hub in nano-electronics and digital technologies. English is our primary working language, and we foster a welcoming, multicultural environment.

Application Procedure

Combine the following into one PDF and email it to nikos.deligiannis@vub.be:

- Cover Letter (1–2 pages) – motivation and fit.
- Curriculum Vitae – education, publications, skills, GitHub / software portfolio link
- References – contact details of 2–3 referees.

Start Date: 1 September 2025 (or as soon as possible thereafter).

Join us to make medical AI explainable, reliable and truly multimodal—for every patient.