Chair of Imaging and Computer Vision

RWTH AACHEN UNIVERSITY

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Advanced Postdoc Position in Medical Imaging

PET Reconstruction & Scanner Calibration

We are seeking an Advanced Postdoc to lead the scanner calibration and quantitative image reconstruction of NeuroLens, a PET insert for simultaneous brain PET/MR imaging. Together with our industrial partner Hyperion and LMU Munich, we take the system from raw singles and coincidences to calibrated, quantitative images for clinical use. You will own this processing chain, decide on its software architecture and algorithms, and lead a small team. Learn more about the project at neurolens.eu.



Top: Hyperion PET/MR scanner. Bottom: Brain PET image.

Your Key Responsibilities

- Run the in-system calibration of gamma position, energy, timing and detector alignment, including PET–MR alignment.
- Develop GPU-based quantitative reconstruction (OSEM/MAP with TOF/DOI), including normalisation, scatter, attenuation, decay and MR-based motion correction.
- Build a tested, versioned software pipeline with live processing and DICOM/PACS export, ready for later medical-device certification.
- Validate the chain on existing scanners, phantoms and the integrated insert, up to on-site measurements.
- Supervise a doctoral researcher and a student assistant, and publish your results.

Your Profile

- A doctorate in physics, electrical engineering, computer science or a related field.
- Several years of hands-on experience in PET image reconstruction and detector or system calibration.
- Strong Python, C++ and GPU (CUDA) skills with professional testing and CI/CD practice; PET/MR or MDR experience is a plus.
- Independent and self-motivated, with experience guiding junior researchers and a strong collaborative mindset.

What We Offer

- Technical ownership of a PET/MR system on its way to clinical use, in close collaboration with industry.
- Your own team, a dedicated GPU server, and access to existing scanner data and the NeuroLens prototype.
- Protected time for publications and one funded international conference per year.
- A full-time position (TV-L E14), initially for 24 months, and RWTH employee benefits.

Applications

Applications should be submitted via email by **31 December 2026**. Please use the subject line “NeuroLens_PET_Postdoc_{LastName}” and include a CV with publication list, your doctoral certificate, a short statement of your experience in PET reconstruction and calibration, and, if available, links to code repositories.