

Funded **Senior Post-Doctoral Researcher** position in the field of Imaging and Artificial Intelligence – Innovative Health Initiative (IHI) AutoPiX

(Imaging, Artificial Intelligence, Biomarkers, Rheumatology)

We are looking for a highly motivated, curiosity-driven, independent, and experienced Postdoctoral Researcher to join our research team to **create new powerful analysis and decision tools** that will improve the applicability and accessibility of **imaging technologies** of patients with rheumatic diseases.

Patients at risk or diagnosed with arthritis are constantly assessed by innovative imaging techniques to document the onset or progression of their disease. However, despite their impressive abundance and resolution, these images lack the analysis and interpretation tools necessary to deliver unbiased and precise diagnosis, monitoring and prognosis to the patients. Additionally, some key advanced imaging methodologies such as ultrasound are hardly accessible to most of patients, urging improvements of more accessible imaging methods.

The project has the ambition to generate tools to transform unstructured images into quantitative biomarkers using artificial intelligence (AI) and machine learning (ML) models, and validate them clinically for their diagnosis, monitoring and prognosis power. In parallel accessible imaging strategies such as remote monitoring and robotic-powered point-of-care ultrasound exams for patients will be developed to mitigate the often-observed shortage of qualified personnel in real world settings.

The successful applicant will be funded by and work collaboratively within the recently kicked-off AutoPiX Innovative Health Initiative (IHI) consortium (<https://www.autopix-project.eu/>), a collaborative group built on multi-disciplinarity and the constant synergistic interaction of all the actors of arthritis care: rheumatologists, radiologists, patients, researchers, regulators, industries and small- and medium sized enterprises (SMEs).

This work will be conducted under the supervision of

- **Peter Mandl**, Associate Professor at the Division of Rheumatology, Medical University of Vienna. Website: <https://innere-med-3.meduniwien.ac.at/en/unsere-abteilungen/rheumatologie/research/research-area-2/forschungsgruppe-peter-mandl/>
- with **Georg Langs**, Professor and Head of the Computational Imaging Research Lab at the Medical University of Vienna. Website: <https://radiologie-nuklearmedizin.meduniwien.ac.at/unsere-abteilungen/computational-imaging-research-lab-cir/>

Your Tasks

- Coordinate the identification, segmentation, annotation and transfer of peripheral x-ray, ultrasound and magnetic resonance images of arthritis patients from academic and industry partners in AutoPiX.
- Liaise and implement the transfer of such images to the AutoPiX data lake/research platform provided by our partner Collective Minds Radiology.
- Manage and implement the identification, segmentation and annotation of peripheral x-ray, ultrasound and magnetic resonance images of arthritis patients in collaboration with PhD- and graduate- students at the Division of Rheumatology, Medical University of Vienna.

- Work on or assist in developing ML-models for assessing and predicting inflammatory and structural changes on x-ray, musculoskeletal ultrasound and MRI images of peripheral joints in arthritis patients.
- Collaborate within a multidisciplinary team within the Division of Rheumatology at MUW and the international AutoPiX Consortium to create new analysis and decision tools for the imaging of patients with rheumatic diseases.
- Participate pro-actively to regular meetings, both online, and onsite to develop the project and strengthen our collaborations with our partners.
- Build on the original proposal by establishing holistic collaborations to reach the AutoPiX project's aims and beyond (including developing new approaches).
- Mentor & supervise junior members of the team working on related projects.

Your Opportunity

- Develop a scientific career towards an independent researcher.
- Present your work at national and international meetings.
- Work in a highly collaborative, translational and international team of researchers.
- Live in Vienna, one of the world's most livable city.

Your Profile

- You have already a PhD, at least five years of postdoc experience, and a solid publication record (at least two first-author publications or one corresponding author publication) in a relevant field (Imaging, Biomarkers, Artificial Intelligence or another relevant biomedical area).
- You have proven experience and interest in data analyses.
- You have proven experience and interest in segmenting and annotating biomedical images.
- You have proven experience and interest in developing and testing ML models in biomedical imaging.
- You are independent, curious and eager to think creatively to solve challenges and reach the aims of the project and beyond.
- You are accurate and diligent in your scientific work and its documentation.
- You are a natural communicator and are eager to collaborate in an interdisciplinary team both locally and internationally. You have experience in supervising team members.

Our Offer

- Close collaboration with a multidisciplinary international team, providing valuable training in experimental design, data analysis and scientific communication.
- Constant opportunities to develop your network with both Academic and Industry partners.
- Access to our research environment with state-of-the-art technologies and methodologies.
- Access to the AutoPiX consortium with multiple opportunities for collaboration and networking.
- Participation in meetings, seminars, and workshops, offering exposure to the latest research in the field.

Application

If you are interested to join our team, please submit a CV, a letter of motivation and two reference letters to: peter.mandl@meduniwien.ac.at (Deadline: 14.03.2025)