

Ries lab

# Postdoc: deep learning for super-resolution microscopy

The Ries lab is developing super-resolution microscopy methods for structural cell biology. In a WWTF-funded project we will develop a new deep learning-based approach to reconstruct a movie of a cellular process from tens of thousands of snapshots taken with high-throughput super-resolution microscopy and are looking for a Postdoctoral Researcher with a background in machine learning.

## About the position/ the research project

The overall aim of the project is to develop a computational approach to reconstruct the structure and dynamics of a cellular process at nanometer resolution from tens of thousands of images measured in fixed cells. We will develop this approach on the example of *endocytosis*, an essential process by which cells take up molecules, but this method will then be applicable to many other cellular processes. You will have abundant data readily available and work closely together with a biologist in the group who will capture new data on demand, and with a computational scientist from our partner lab, the Lab of Jakob Macke in Tübingen. This project will extend previous work based on maximum likelihood estimation (<https://doi.org/10.1038/s41592-022-01676-z>).

## Candidates

We are looking for a talented, highly motivated postdoctoral scientist who is excited to develop computational approaches with wide applicability in the life sciences. You should hold a PhD degree in computer science or physics and should have a strong background in machine learning, preferably deep learning. Experience in computer vision or image analysis, especially microscopy images, is highly appreciated. Training and supervision will be provided throughout the project, but we also expect a high level of drive and independence. Excellent spoken and written English skills are required.

## Application

Please send your documents to [jonas.ries@univie.ac.at](mailto:jonas.ries@univie.ac.at) and include a concise description of research experience, a list of published articles and contact details for three references. Interviews will be held on a rolling basis and as soon as a suitable candidate is found, the position will be filled. The position is initially funded for a period of three years.

## Contact

For details in the project contact please contact: Jonas Ries ([jonas.ries@maxperutzlabs.ac.at](mailto:jonas.ries@maxperutzlabs.ac.at)). Further information about the Ries lab at:

- <https://www.maxperutzlabs.ac.at/research/research-groups/ries>
- <https://rieslab.de>

## About the Max Perutz Labs

The successful applicant will work in a stimulating scientific environment: [Department for Structural and Computational Biology at the Max Perutz Labs](#), a research institute established by the University of Vienna and the Medical University of Vienna. Dedicated to a mechanistic understanding of fundamental biomedical processes, scientists at the Max Perutz Labs aim to link breakthroughs in basic research to advances in human health. The Max Perutz Labs are located at the [Vienna BioCenter](#), one of Europe's hotspots for Life Sciences, and host 44 research groups, involving around 400 scientists and staff from more than 50 nations.