

**Earliest start
01.02.2025**



Institute for Automation and Applied Informatics (IAI)

Bachelor / Master's Thesis

Title: Cell Segmentation in Imaging Flow Cytometry

Are you ready to dive into the fascinating world of biomedical innovation? Are you passionate about computer vision? Join us in advancing the field of cellular interaction in imaging flow cytometry.

A critical step in understanding cellular structures and processes is indeed the segmentation, which enables identification and characterization of different cells.

This thesis offers the chance to work on cutting-edge computational techniques for analyzing biomedical images, contributing to innovations in medical research and diagnostics.

Tasks

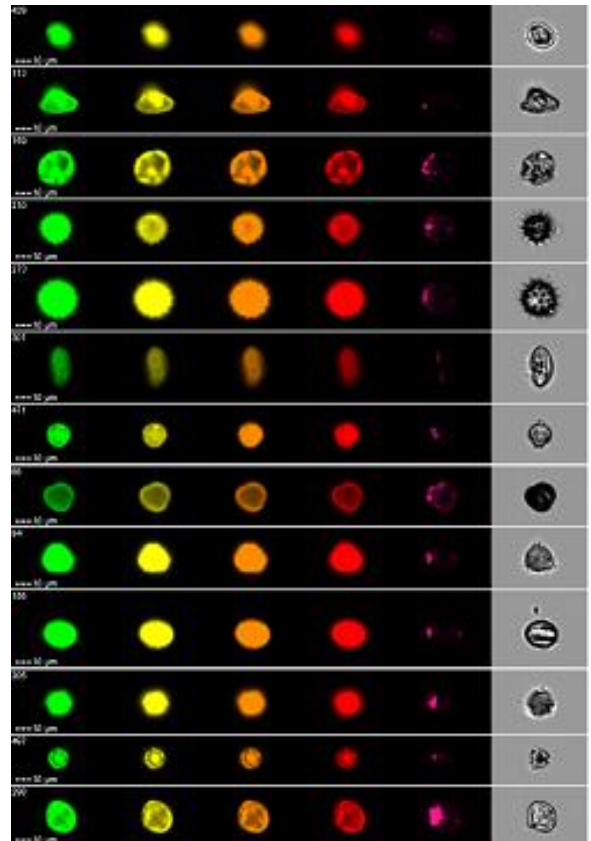
The investigation should cover the following aspects,

- Literature research on state-of-the-art segmentation, focusing on biomedical image data
- Benchmarking of the researched segmentation methods on various dataset based on predefined KPIs (Key-Performance-Indicator)
- Improvement of one selected method

Requirements:

The following skills, abilities, and knowledge are necessary:

- Studies in Computer Science / Engineering or related fields
- Basic knowledge in deep learning and image processing
- Experience with programming in Python
- Experience with image processing libraries in Python such as OpenCV
- Experience with Python-based deep learning frameworks (PyTorch, JAX, or TensorFlow)



<https://www.ufz.de/index.php?en=45879>

Benefits:

- Thesis can be done in German or English
- Possibility to work from home
- Onboarding

Interesting for you? Please send an e-mail with your resume and transcript of records to the contact person below.