Beat the Baseline – an Interdisciplinary Project for Informatics (IDP) in Cancer Diagnostics

for the Munich lab of 2NA FISH, a biotech-startup at TU Munich, EXIST Forschungstransfer grant holder and winner of the Medical-Valley-Award

Advance Cancer Therapy Matching:

Ready for a startup challenge? Join 2NA FISH, a Munich-based biotech startup on a groundbreaking mission to revolutionize cancer diagnostics. We seek data science experts to shape the future of spatial transcriptomics and fight cancer impactfully.

At 2NA FISH, we use Fluorescence in situ Hybridization (FISH) to detect RNA in cells. This method works by attaching fluorescent molecules to RNA, which can then be seen as bright spots under a microscope (Figure 1). The information of the RNA-profile of a tumour can be used to find the optimal therapy for an individual patient.

2NA FISH is a high-tech startup, doing cutting edge research in cancer biology. We value scientific curiosity and integrity as well as an organized, reliable and reproducible style of work. Join us in our mission to make a difference in the life of millions.

Figure 1: RNA-FISH image of nine cells. Bright Spots around the blue areas are detected RNA. Cell nucleus colored in blue. Taken from https://www.biosearchtech.com/support/education/stellaris-rna-fish.

Project Outline – Beat our Classification Baseline:

Set up a classification pipeline for FISH images, that excels our current baseline. This pipeline should work independent of the microscope used and be robust against noise from different lab-users. As a side task, you can systematically review relevant scientific literature or find the most relevant features of an image, depending on your personal preference.
Your IDP at 2NA FISH:

- Work together with our experienced scientists in the lab to learn more about the biologic backgrounds or request additional data
- Have regular 1on1’s with the founders and get qualitative feedback on your work
- Work remotely. We have our office near the TUM Informatics Faculty, where you are always welcome, but you can work remotely if you like!
- Start date: As soon as possible 😊

What you should bring to 2NA FISH:

- Experience in programming with Python, with a focus on data science (i.e. packages NumPy, pandas and optionally SciPy, scikit-learn, scikit-image or similar)
- Experience in deep learning with Python (PyTorch, TensorFlow or similar)
- Experience with image analysis
- Good knowledge of common data science techniques
- Basic knowledge of GIT
- Reliable and organized style of working
- High scientific curiosity
- Optional plus: Basic knowledge in biology

How to: Please email your CV and short cover letter to hiring@2nafish.bio. We look forward to receiving your application. Together, let’s make a difference in the lives of millions!