Bachelor/Master Thesis

Developing algorithms for studying development of real neuronal networks

Background

The study of real neuronal networks is essential to understand the interaction and wiring principles within a heterogeneous cell population. Highlighting why individual cells connect with each other will help revealing the underlying laws of a cell culture formation.

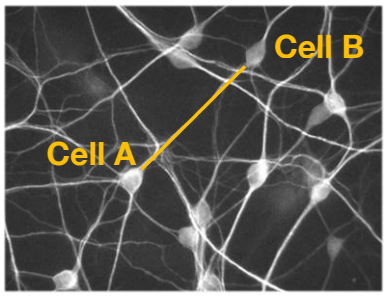
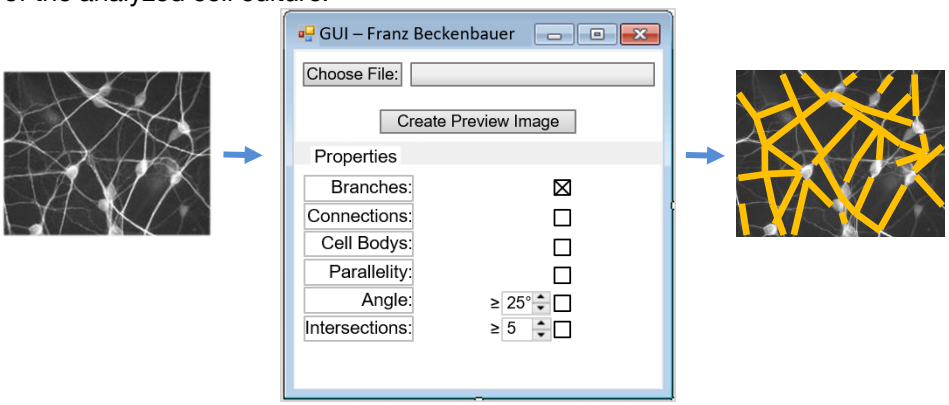


Figure 1 Dahari I, Baranes D, Minnes R. Automatic Identification of Dendritic Branches and their Orientation. J Vis Exp. 2021 Sep 17;(175). doi: 10.3791/62679. PMID: 34605799

Scope

Use classic methods to classify, segment, detect objects and denoise the images of a cell-culture made by microscope. An algorithm will be created to functionalize these wiring principles methods and illustrate the results with an interface.
The interface therefore should include these algorithms and also enable the possibility to select one of the single operations and display the results on the image of the analyzed cell culture.



Requirements

- Matlab coding and GUI development
- Image analysis
- Python

If you are interested for more details, please send an email to:
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