Master's Thesis Project in Biomedical Visualization

The **Biomedical Image Informatics Group** at the VRVis Forschungs-GmbH in Vienna, Austria, tackles biomedical image informatics challenges in a friendly and inspiring atmosphere by (pre-)processing, analyzing and visualizing large amounts of image data from medicine and biotechnology.

Currently, we are looking for support from a student (f/m/d) who would like to give her/his master's thesis an application driven focus with the following topic:

Interfaces and Visualization for Fruit Fly Larvae Brains

Neuroscience is focused on understanding how the brain functions both structurally as well as functionally. This is accomplished by imaging brains using a variety of different methods including EM, confocal, LM, etc. The challenge is to identify neurons across these images to understand how the brain develops throughout an organism's life.

The aim of this master's thesis project is to develop interfaces and visualization to answer questions related to the connections and similarities between different anatomical structures of the fruit fly larvae brains. For example, how do neurons in the left and right hemisphere compare? Or, how does a particular neuron change as the organism grow? To answer these questions, we need effective interfaces and visualizations.

Task

- Work with domain experts to develop a set of requirements/tasks
- Create prototypes to address the tasks using, e.g. the 5 design sheet methodology
- Implement the final prototype as the solution in larvalbrain (www.larvalbrain.org) which aims to be a single access point to all data related to the study of Drosophila larvae neurology by integrating data from a number of different research labs around the world

What you will bring to the team

- Bachelor's degree in computing, informatics, data science or a similar area
- Interest in image processing and biomedical visualization
- Programming skills in Javascript/TapeScript and Go as the project will be integrated directly into larvalbrain

What we offer in return

- Very friendly and supportive work atmosphere
- Flexible working hours and well-equipped workplace
- Excellent professional support by our team
- Opportunity to access our network of university partners (e.g. for thesis supervision)
- Opportunity for female researchers to join the Women in Visual Computing Network hosted by our colleagues
- Appropriate remuneration upon successful thesis completion

Applications are always welcome!

Please contact Thomas Torsney-Weir to send in your application or to inquire about additional information.

We especially would like to encourage female students to apply!

Contact

Dr. Thomas Torsney-Weir
Torsney-weir@vrvis.at

VRVis Zentrum für Virtual Reality und Visualisierung Forschungs-GmbH
Donau-City-Str. 11, 1220 Vienna, Austria
http://www.vrvis.at