Build research tools for cutting-edge biotech

An opportunity for python coders to enter an exciting industry and help change how cures are discovered.

About Persomics – persomics.com

Persomics is a Swedish biotech company providing a revolutionary technology that allows scientists to perform thousands of parallel cell biological experiments in an easy to use consumable instead of using expensive robotic labs.

Persomics has developed a printing press for gene silencing experiments where individual experiments can be printed in 500 µm spots on a glass plate. Up to 3200 experiments can be printed on a single plate.

Gene silencing is an important research tool but has been reserved for large and well-funded laboratories. Persomics democratizes this research tool and brings this it to the wider research community.

Persomics was founded 2014 and has its offices in Gothenburg, Sweden and Boston, USA.

The ImagineArray™ platform

The Persomics ImagineArray™ platform is a range of pre-configured plates. Each plate holds up to 3200 spots which encapsulate an RNA and other reagents necessary for silencing a gene inside the cells that are added to the experiment.

Cells are added (in a liquid) on top of the spots and allowed to incubate for approx. 48h. The whole array of spots is then imaged by an fluorescent microscope which produces a large 3-color tiff-file (2-6 gigabytes).
Persomics Analysis

Persomics is expanding the range of software tools available to clients. The company’s aim is to deliver a streamlined experience. To that end, Persomics is developing an online environment where researchers can log in, upload images, split images into individual spot images and apply their analysis framework on the results.

The Persomics Analysis environment is a mix of proprietary and open-source code. Persomics has developed an algorithm to detect and cut out individual spots, and also developed a foundation for the platform. Added to this are open-source algorithms from the tool CellProfiler.

Master Thesis

The Master Thesis aim is to extend the Persomics Analysis from v1 to v2, and will involve full-stack development: from improving the basic image processing algorithms to building a web interface that delivers a great user experience.

Persomics Analysis is written entirely in Python and the UI uses the Django web framework. Deployment is on AWS Elastic Beanstalk.

After initial briefings and code familiarization, students will start by solving an initial set of smaller problems. From there the students will move on to doing full-stack development of a new feature and deploying this feature to production.

Persomics welcomes innovation and creative input. For enterprising students there is an opportunity to alter direction based on new ideas. Persomics also offers the opportunity to visit the company lab in Boston, MA.

Example from analysis of two different experiments using Cell Profiler
Requirements

Two students are welcome to collaborate and we believe you have the following qualifications:

- Excellent programming skills in Python
- Knowledge of the Django web framework
- Knowledge of production deployment (preferably on AWS Elastic Beanstalk)
- Basic understanding of image processing
- Enthusiasm to learn about cell biology
- Full-stack mindset, positive attitude, proactive, innovative

Apply

- Start date: January 2017 or earlier.
- Duration: 6 months
- Location: Gothenburg, Sweden (with option to travel)

Please send your CV and short cover letter to viktor.bengtsson@persomics.com.