GYROS PROTEIN Technologies

# Master level thesis/degree project

**Make a new software implementation of an optimization problem, related to placing samples for processing on Gyros CD microlaboratories**

***Background:***
Gyros Protein Technologies [Gyros] develops and produces microlaboratories for sample processing in a CD form factor, typically allowing for around 100 samples per CD. In addition to this, Gyros develops instrument and software to automate the CD handling and to support the analysis of results. Typical user applications are in the Life Science area within drug development.

Placing samples on the CDs should in general be done so that the unused area per CD is minimized, while respecting numerous conditions like

- Subset of samples must be placed together.
- When a sample is placed on a certain CD, a set of reference samples (”standard curve” (full or a subset) and quality control samples) must be placed on the same CD to allow evaluation of the result after processing the CD.
- Many CD types are segmented, and within one segment, only samples with the same ”reagent set” property may be placed.
- The algorithm placing the sample must be reasonably fast (”interactive”), and deterministic.

***Specific task for this degree project:***
Gyros currently has a ”handcrafted” algorithm written in a procedural programming language that performs well, but is not guaranteed to find a global optimum. The task for this work is to attack the problem in a new way, most likely by using a logic language, to see if an improved implementation can be found.

***Questions and/or application:***
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For more information on the Gyrolab CD technology, see
https://www.gyrosproteintechnologies.com/gyrolab-cds-automated-immunoassays

## Gyrolab CDs| Automated Immunoassays | Gyros Protein ...

www.gyrosproteintechnologies.com

Run immunoassays at nanoliter-scale using Gyrolab proprietary CD microstructure technology to maximize reproducibility and reliability.