



# Thesis Projects (MIE498 H/Y) 2018–2019

**Title/Topic:** Comparison of image processing options for microarrays

**Description:**

Microarrays require a number of steps including printing of biological and chemical materials on an optically-transparent substrate (this require dispensing, curing, putting down a protective coating that is then dried to create a plate). Tests are then run by loading a sample, onto the plate, performing mechanical rotation of the plate, washing and then drying the final plate. This is then followed by analysis using proprietary software analysis tools. If a new microarray is to be developed, design and construction of custom arrays requires a rigorous understanding of the printing, chemistry and physics. Printing requires the generation of a GAL (GenePix Associated List) file with spot coordinates and lampposts. Every new microarray layout requires coordination of all steps. To circumvent these issues, I am interested in benchmarking an open-source microarray suite that combines all of the steps from printing to analysis.

It is useful to have a background in ImageJ and Python.

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