STOCKHOLMS UNIVERSITET
MATEMATISKA INSTITUTIONEN
Avd. Matematisk statistik

11 January 2022

Project plan for master degree project in mathematical statistics

The project plan should be written in the beginning of the work by the student in cooperation with the supervisor. If the project is not finish within 6 months after the preliminary presentation date, a new project plan must be written. To have the completed thesis published on the department's website, an active approval of the student is required.

Student:	Anton Holm, 931031-8515
Supervisor:	Chun-Biu Li
External supervisor:	-
Prel. date of presentation:	June 2022
Web publication	Yes

Description of the project

1. Preliminary title
   Adaptive density based method for clustering of genes from in situ data

2. A brief decription of the problem and how to solve it
   As a part of a larger project at SciLifeLab I will construct a method that can take data from in situ samples of tissue and cluster the genes where each cluster will represent a cell. I will do this by first using an adaptive density based estimation of the genes, take care of problems that can arise from this such as bias at the borders, and then apply a density based clustering method. I will also make use of validation methods for unsupervised learning methods.

3. Timetable
   Jan-Mars: Learn and understand theory
   Mars: Apply and evaluate method. Start writing some parts.
   April: Continue to improve method. Apply on data from SciLifeLab. Start using validation methods. Continue writing.
   May: Finish evaluation. Finish writing. Start working on presentation.
   June: Presentation

Stockholm 11 January 2022

Anton Holm Chun-Biu Li