MA8701 Advanced methods in statistical inference and learning

V2021 -
L1: Introduction - Effective number of parameters, Boostrapping
L2: Shrinkage - the beginning

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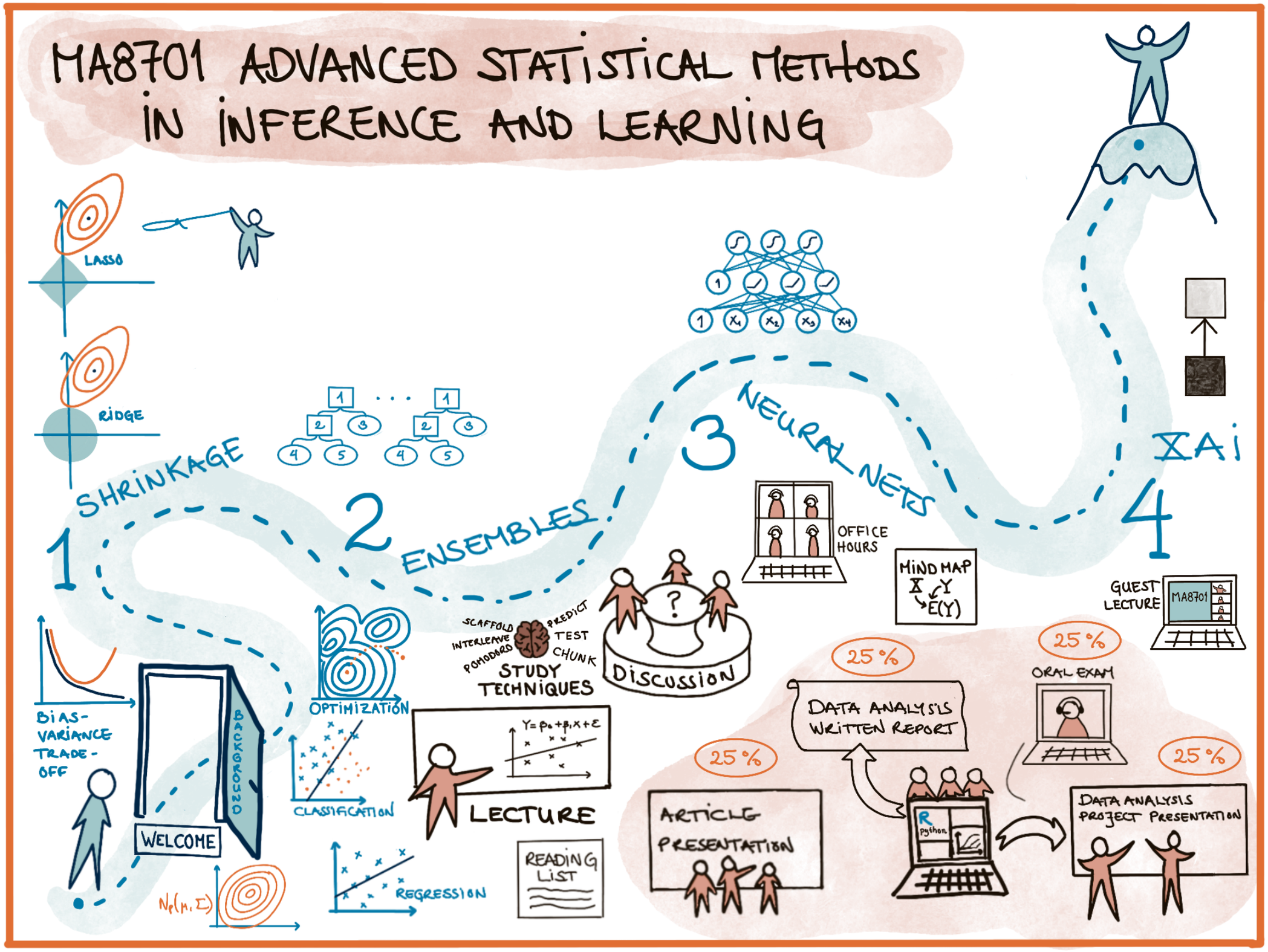
Introduction

- Notation
- Statistical decision theoretic framework (partly new)
- Model selection and model assessment - including bias-variance trade-off (mostly new)

Part 1: Shrinkage [3 weeks]

- ELS 3.2.3,3.4, 3.8, 4.4.4.
- Hastie, Tibshirani, Wainwright (HTW): Statistical Learning with Sparsity: The Lasso and Generalizations. Selected chapters.
- Post-selective inference (articles)
- An introduction to analysing text



Learning methods and activities

- One practical compulsory group project in data analysis (application of course theory using R or Python) with short report. Topic: Part 1 on Shrinkage, chosen data set discussed with lecturer before start. Due mid February. First given comments by one other group, then evaluated by course responsible. (25% of pass/fail grade)

- One article group presentation, orally (15 minutes+questions). Material from Parts 2 and 3 preferred, and must be decided on with lecturer (might also be parts of your own master thesis if applicable). Due before Easter. (25% of pass/fail)

- Practical compulsory project in data analysis (application of course theory using R or Python) with oral presentation (15 minutes+questions). Topic: Part 2-4, data set and methods discussed with lecturer before start. Due after Part 4 is finished. (25% of pass/fail grade)