

E7441: Scientific computing in biology and biomedicine

Project topics

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Project – learning from the state-of-the-art

Study *ridge regression* and its implementation in `scikit-learn`: each team will study one optimizer,

- Cholesky
- singular value decomposition (SVD)
- regularized least-squares, and
- limited-memory Broyden-Fletcher-Goldfarb-Shanno (LBFGS)

Points to be discussed:

- (all) understand the mathematical problem and its solution
- (all) understand the various cases - mathematical formulation, when to apply, what are the constraints
- (by team) study the allocated case: general implementation of the numerical solution (hint: look for `_solve_*`() functions in the corresponding PYTHON module) and prepare an example specific to that case
- (all) comparison, discussion, and conclusions