COURSE DETAIL

NUMERICAL OPTIMIZATION
Country Denmark
Host Institution University of Copenhagen
Program(s) University of Copenhagen
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Mathematics Computer Science
UCEAP Course Number 167
UCEAP Course Suffix
UCEAP Official Title NUMERICAL OPTIMIZATION
UCEAP Transcript Title NUM OPTIMIZATION
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description

This course builds up a toolbox of numerical optimization methods for building solutions in future studies, thereby making it an ideal supplement for students from many different fields in science. The course is taught both at a theoretical level that goes into deriving the math, and also on an implementation level with focus on computer science and good programming practice. Students participate in weekly programming exercises where they implement the algorithms and methods introduced from theory, and apply their own implementations to case-study problems like computing the motion of a robot hand or fitting a model to highly non-linear data. Topics include: first order optimality conditions, Karush-Kuhn-Tucker conditions, Taylors theorem, mean value theorem, nonlinear equation solving, linear search methods, trust region methods, linear least-squares fitting, regression problems, and normal equations.

Language(s) of Instruction
English

Host Institution Course Number
NDAA09009U

Host Institution Course Title
NUMERICAL OPTIMISATION

Host Institution Course Details
https://kurser.ku.dk/course/ndaa09009u/2021-2022

Host Institution Campus

Host Institution Faculty
Faculty of Science

Host Institution Degree
Master

Host Institution Department

Department of Computer Science

Course Last Reviewed
2021-2022

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