Faculty of Science
Department of Mathematics

NUS National University of Singapore

MA4198 PROJECT PROPOSAL (PROJECT CUM SEMINAR GROUP)

SUPERVISOR'S INFO

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PROJECT ID: PS2420-02

TITLE

Numerical methods for solving optimization problems

BRIEF DESCRIPTION OF PROJECT

Many real-life applications can be formulated as an optimization problem. In this project, we will review some classical numerical methods for solving continuous optimization problems. Some examples of the methods include Trust-Region Methods, Conjugate Gradient Methods, Newton Methods, Interior-point methods, Sequential Quadratic Programming, and etc. Numerical experiments will be conducted to compare the performances of such methods.

EXPECTATION/S

By completing this project, students should have a deep understanding of the numerical methods available for solving optimization problems. They should be able to produce simple programming code to implement the methods as well.

PREREQUISITE/S (at level 3000 or below, with at most one course at level 3000)

MA3236

READING REFERENCE/S

Jorge Nocedal and Stephen J. Wright. Numerical Optimization, Springer. Available online.