

The KKT Conditions

Lecture 11-3 - CMSE 382

Prof. Elizabeth Munch

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Dept of Computational Mathematics, Science & Engineering

Weds, Apr 8, 2026

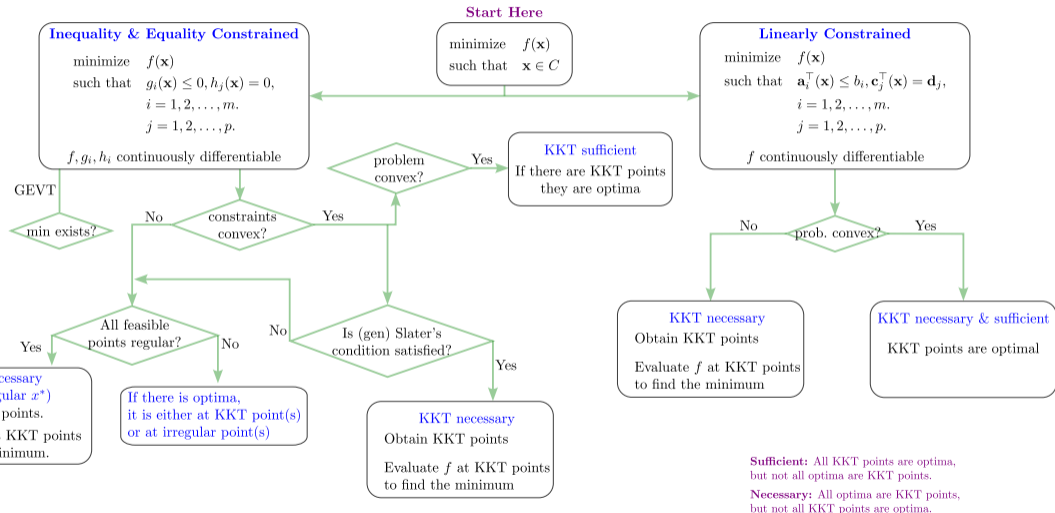
Topics:

- Review of KKT conditions

Announcements:

- HW 5 posted, due Friday, Apr 10 at 11:59pm

Big picture view (v2)



Sufficiency and Necessity

Sufficient

- All KKT points are optima.
- Optima might not be KKT points.

Necessary

- All optima are KKT points.
- KKT points might not be optima.

- If you only have sufficiency you know that any KKT point is an optimum. But you might miss some optima that are not KKT points.
- If you only have necessity you know that any optimum is a KKT point. But you might have some KKT points that are not optima.
- Best option is to have both, then you know that the KKT points are exactly the optima.

Groups - Round 5

Group 1

Michal, Kyle, Daniel,
Purvi

Group 2

Joseph, Jack, Scott,
Breena

Group 3

Saitej, Dori, Noah,
Tianjian

Group 4

Dev, Shanze, Lowell,
Andrew

Group 5

Lora, Aidan, Arjun,
Monirul Amin

Group 6

Anthony, Abigail,
Atticus, Yousif

Group 7

Luis, Vinod, Morgan,
Dominic

Group 8

Jay, Jonid, Alice, Aaron

Group 9

Arya, Jake, K M Tausif,
Lauryn

Group 10

Maye, Ha, Zheng, Sai

Group 11

Jamie, Karen, Brandon,
Quang Minh

Group 12

Long, Sanskaar,
Braedon, Igor