Optimization + Assignments 3, 4

(Neural Networks Implementation and Application Tutorial)

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Overview

- Assignment 1
- Hessian and Jacobian
- Saddle Point
- Assignment 2

Assignment 3

- Points for presentation 🤩
- What was the hardest part?

Hessian and Jacobian

Functions

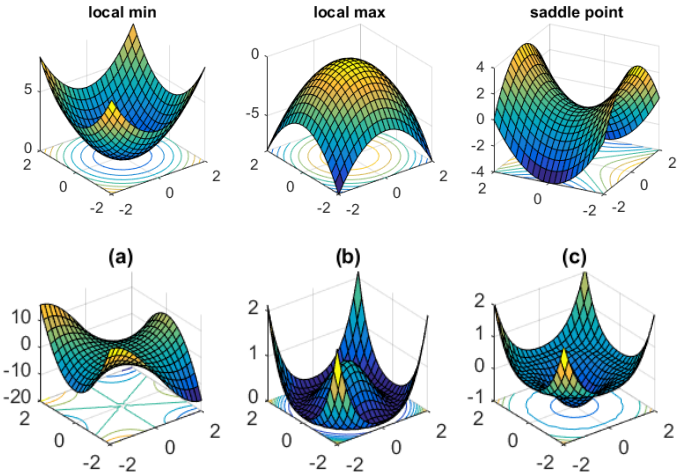
- $f_1 : \mathbb{R} \to \mathbb{R}$ $\quad f_2 : \mathbb{R}^m \to \mathbb{R}$ $\quad f_3 : \mathbb{R} \to \mathbb{R}^n$ $\quad f_4 : \mathbb{R}^m \to \mathbb{R}^n$
- What are some model examples for these functions?

Questions 🤔

- What is the Jacobian?
- What is the Hessian?
- What are the matrix dimensions of Jacobian for f_1, f_2, f_3, f_4?
- What are the matrix dimensions of Hessian for f_1, f_2, f_3, f_4?

Saddle Point

- What is the saddle point? Is it good?



Assignment 4

Any questions?

Resources

- How can it be trapped in a saddle point?