Mô hình tạo sinh hình ảnh và video

Chương 0: Giới thiệu chung

Lecturer

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General information

- Course name:

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- Code: IT5413

- Credit: 3(3-1-0-6)
  - Lecturer: 45 hours
  - Capstone project: 15 hours
  - Experiments: 0 hours

Evaluation

- Mid-term (0.5)
  - Capstone project evaluation
    - Program
    - Report
    - Presentation
  - Bonus
- Final term: (0.5)

Rules

- In-class attendance
- Telephone:
  – turn-off or in vibration mode
- Come in/out if necessary
  – No need for asking permission
  – Without noise

Course Content

- **Chapter 1.** Introduction
- **Chapter 2.** Knowledge of computer vision
- **Chapter 3.** Generative models in computer vision
- **Chapter 4.** Self-supervised learning in computer vision
- **Chapter 5.** Vision Transformer + Vision Mamba
- **Chapter 6.** Energy-based models and Score-based models in computer vision
- **Chapter 7**. Image generation using stable diffusion model
- **Chapter 8**. Conditional generative model

Course Content

- **Chapter 9.** Implementing generatives models for image-related problems in computer vision

- **Chapter 10.** Implementing generative models in 3D imaging

- **Chapter 11.** Generative models in video synthesis

How to learn?

- Class attendance
- Reading additional articles / books
- Practice your-self (OpenCV, ...)
- QA

Reference books

- [1]. Richard Szeliski (2011). Computer Vision: Algorithms and Applications. Springer. http://szeliski.org/Book/

- [2]. David A. Forsyth, Jean Ponce (2011). Computer Vision: A modern Approach. Pearson

- [3]. Stanford CS236: Deep Generative Models.
  https://deepgenerativemodels.github.io/syllabus.html

- [4] Stanford CS231n: Deep Learning for Computer Vision

    https://cs231n.stanford.edu
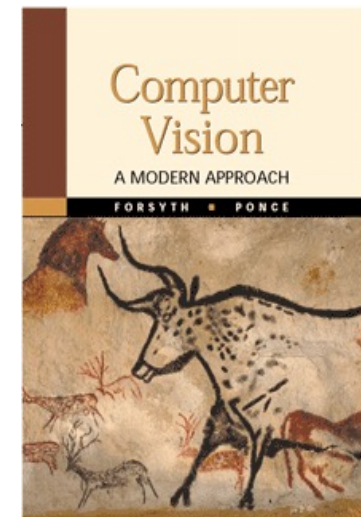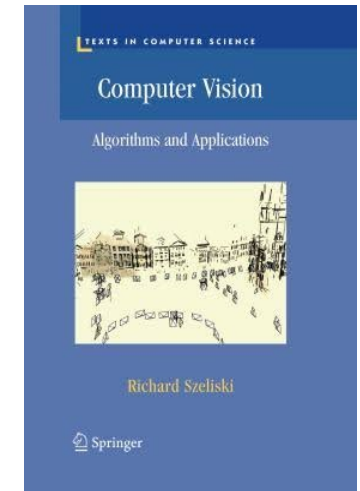
Thank you for your attention!

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