

The Hong Kong University of Science and Technology
Department of Computer Science and Engineering
COMP 5423: Deep Learning for Medical Image Analysis (Spring 2024)
- Assignment 1 -

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Due: **Mar 31, 2024, 11:59pm**

1. Overview

Recently, foundation models significantly advanced the performance in the field of medical image analysis. These models utilize deep learning techniques to extract valuable information from large-scale medical images, assisting healthcare professionals in interpreting and analyzing complex medical images. By training on large-scale medical image datasets, foundation models learn to recognize patterns, features, and abnormalities present in various types of medical images, enabling accurate measurements and quantitative analysis. The integration of foundation models with tasks such as image segmentation, classification, detection, and reconstruction in medical image analysis has the potential to enhance diagnostic accuracy, reduce human errors, and improve patient outcomes. Ultimately, foundation models play a crucial role in improving the efficiency and effectiveness of medical image analysis, supporting healthcare professionals in making informed decisions for diagnosis and treatment.

2. Requirements

In this assignment, you need to **make an in-depth survey about the methods and applications of foundation models in medical image analysis**. You are required to submit a **writing report**, which covers including but not limited to: **the introduction of foundation models, the taxonomy of existing works, the comparison of related methods, summary of pros & cons, discussion and conclusion. You are encouraged to have insightful discussions and propose possible research trends (Bonus)**.

3. Submission Materials

Everyone is required to submit ONE writing report on Canvas. The report needs to be organized in CVPR template with at most 8 pages (**excluding references**), and named StudentID.pdf, i.e., 1234567.pdf

- Download LaTeX/Word Templates [Zip](#) file.

4. Grading Scheme

100 points for this assignment, 10% out of final course grade.

Details:

- Writing Report (100pts)
- Bonus (max. 20pts)

Late Penalty: Late will get 20% deducted. Later than one day is not accepted.

Similarity Score: A similarity score will be automatically computed by Turnitin for your submission. Penalties will apply to those with high similar scores.