

CSC4050 CS capstone project information collection

序号: 4
来源IP: 175.45.38.98 (香港-未知)

填写时间: 2023/12/13 19:25:48
来源渠道: 微信

1. Name*

Jun Han

2. How many students would you like to take?*

2

3. A brief description of the projects the students could work on*

We are offering two project topics for students to choose from:

1) Web-Based Interactive Interface for Deep Learning Model Interpretation

This project aims to develop a web-based interactive interface that employs visualization and interaction techniques to demystify deep learning models, including diffusion models and transformers. Students will be tasked with designing a multi-view interface that provides insight into the internal structure of deep learning models. In addition, the interface will allow users to manipulate model output, thus integrating human judgment into the decision-making loop.

2) AI-Driven Generative Techniques for Augmenting 3D Time-Varying Data

The focus of this project is on leveraging artificial intelligence generative techniques to augment various types of 3D time-varying data, such as oceanic flows and medical datasets. Students will develop generative models capable of producing realistic synthetic scientific data. The goal is for these synthetic datasets to enhance the performance of deep learning models in downstream tasks, particularly when the availability of training data is limited.

4. Requirements (e.g. html or c++ skills)*

Students should be familiar with HTML, CSS, JavaScript, D3, and one deep learning library, such as Pytorch. In addition, students should take all of the following courses before selecting one of the projects: DDA2003 Visual Analytics, CSC4130 Introduction to Human-Computer Interaction, and DDA4220 Deep Learning and Its Applications.

5. Other comments or suggestions

(空)