**Chengdu University of Technology Oxford Brookes College**

**Project Module (CHC 6096)**

**Weekly Report Sheet**

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| DATE: | 2023/02/27-2023/03/05 |
| Briefly list all the main tasks you accomplished in the last semester.  Last semester, I completed the collection and pre-processing of data: I downloaded the Book-Crossing dataset, which includes book ratings from users, book titles, authors, and genres. I pre-processed the dataset by cleaning and normalizing the data, including removing duplicate values, handling missing values, and standardizing the data format. Then, I implemented the DCN model, a deep learning algorithm that combines deep neural networks with cross-networks to capture low-level and high-level interactions between features. I used PyTorch to implement the DCN model and trained the model using book ratings and book features as inputs. To train the model, I divided the dataset into training, validation, and testing sets, and used cloud servers for the training process. I trained the model on the training set and evaluated its accuracy using precision. | |
| Briefly state all the challenges you encountered in the last semester.  Device: My computer cannot run the model, perhaps because the graphics card and GPU performance are not good, so it is very inconvenient to buy a cloud computing platform to test the algorithm  Time management: The progress of the last semester was still too slow, and I need to test and evaluate the model more quickly.  Not solid in knowledge mastery: I often need to relearn things before I can continue to adjust the code, which is time-consuming. It is also very time-waste to search for and correct bugs. | |
| Briefly Plan out the agenda for this semester.   1. Model Evaluation:   I plan to use more metrics such as recall and F1 score to evaluate the accuracy of the model. Different models can also be compared using techniques such as cross-validation and A/B testing.   1. Improve the model:   Based on the evaluation, hyperparameters of the model will be fine-tuned to improve its accuracy.   1. Building a Web Application:   To build a web application, a web development framework such as Flask or Django will be used. The DCN model will be integrated with the web application for book recommendations.  (1). Choose a web development framework  (2). Designing the User Interface  (3). Integrate the recommendation model  (4). Developing the backend  (5). Developing the front end  (6). Test application   1. Deploying the Web Application:   The web application will be deployed on cloud platforms such as AWS, Google Cloud. Containerization technologies such as Docker will be used to make the deployment process more scalable and efficient. Load balancers and auto-scaling groups will be set up to handle increasing traffic and ensure high availability.   1. Monitoring and Updating the Model:   The performance of the model will be monitored regularly, and new data will be used to update the model to improve the accuracy of recommendations. Tools such as Grafana will be used to monitor the performance of the web application and the model. | |
| SUPERVISOR SIGNATURE: |  |