2022 ADL Final Project

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Final Group Project (3-4 persons)

Task 1 : Propose your own task

- Research-oriented
- Lecture-related methodology
- **Novelty**

Task 2 : Grand Challenge

- Kaggle competition
- Awards for top teams
- **Performance**

Grand Challenge

Task Description

Hahow : online learning platform

Web3 社群經理的 53 堂課：元宇宙轉職就看

目前無評價

課時 599 分鐘

同學 102 人 NT$3,800

客人自動找到你！ Google 地標「我的商

目前無評價

課時 163 分鐘

同學 120 人 NT$1,890

色彩加氛圍，我選 Procreate！

目前無評價

課時 507 分鐘

同學 1683 人 NT$2,850

Metashape 3D 掃描 | 你的相機就是掃描器！

目前無評價

課時 169 分鐘

同學 45 人 NT$3,540

Task Description

Target :

- learn the correlation between different courses
- predict the courses the user would buy in the future

Task Description

零基礎轉職！網頁設計 HTML、CSS 快速入

目前無評價

課時 530 分鐘

同學 108 人 NT$2,690

2021/1/20

Python 的 50+ 練習：資料科學學習手冊

★★★★★ 12 則評價

課時 1047 分鐘

同學 469 人 NT$3,480

2021/4/6

給前端工程師的 Web 3.0 入門

★★★★★ 4 則評價

課時 163 分鐘

同學 40 人 NT$3,599

2021/5/20

Task Description

model prediction :

Unity 從零開始新手入門：2D 橫向捲軸遊戲

★★★★★ 15 則評價

課時 115 分鐘

同學 700 人 NT$799

Rank : 1

UX 設計/研究全攻略: 給新手的職場通識課

★★★★½ 34 則評價

課時 739 分鐘

同學 1808 人 NT$3,349

2

Adam 個人理財術：從培養財務認知開始！

★★★★★ 179 則評價

課時 166 分鐘

同學 4486 人 NT$2,250

3

子麵的影像合成課！創作招式＆接案流程大公

預購價 NT$2,380 剩 30 天

已募資 107%

4

Data Files

- Data: course purchase records from Hahow company
- course purchase records (**2021/1/1 - 2021/12/31**)
  - user_id：用戶識別 ID
  - course_id：課程識別 ID，用空格分隔多項
- unseen : user_id is not observed in train.csv
- seen : user_id is observed in train.csv

不管是seen或unseen都不能用valid裡面的資料去做training

課程購買記錄（篩選購買時間：2021/1/1 - 2021/12/31）

	train.csv	val_seen.csv	val_unseen.csv	test_seen.csv	test_unseen.csv
Time	2021/01/01 - 2021/08/31	2021/09/01 - 2021/10/31	2021/09/01 - 2021/10/31	2021/11/01 - 2021/12/31	2021/11/01 - 2021/12/31
User count	59737	7748	11622	7205	11097

Data Files

- courses.csv - all courses information
  - course_id：課程識別 ID
  - course_name：課程名稱
  - course_price：課程價格
  - teacher_id：老師識別 ID
  - teacher_intro：老師簡介
  - groups：課程分類
  - sub_groups：課程子分類
  - topics：課程主題
  - course_published_at_local：該課程識別 ID 的發行時間
  - description：課程詳情
  - will_learn：課程詳情 — 你可以學到
  - required_tools：課程詳情 — 需要準備的工具 / 軟體
  - recommended_background：課程詳情 — 需要具備的背景知識
  - target_group：課程詳情 — 哪些人適合這堂課

Data Files

- course_chapter_items.csv - all chapters information
  - course_id：課程識別 ID
  - chapter_id：章節識別 ID
  - chapter_no：章節編號
  - chapter_name：章節名稱
  - chapter_item_id：單元識別 ID
  - chapter_item_no：單元編號
  - chapter_item_name：單元名稱
  - chapter_item_type：單元類型（課程/作業）
  - video_length_in_seconds：單元影片長度（秒）

Data Files

- https://drive.google.com/file/d/1rR7hUqBmi8GtjwPNVSmsJXlfoF1WtRu4/view?usp=sharing
- users.csv - all users information
  - user_id：用戶識別 ID
  - gender：用戶性別
  - occupation_titles：用戶職業類別。為複選，使用逗號分隔多項
  - interests：用戶興趣。為複選，格式為 {分類}_{子分類}，使用逗號分隔多項
  - recreation_names：用戶喜好。為複選，使用逗號分隔多項
- subgroups.csv - all subgroup ID and names
- train_group.csv or val_seen_group.csv or val_unseen_group.csv

  -users and their corresponding subgroup_ids

Evaluation

output_course_format

- you can rank as many **courses_id** as possible

```
user_id,course_id
user_id_1,course_id_1 course_id_2 course_id_3 course_id_4
user_id_2,course_id_1 course_id_2 course_id_3 course_id_4
user_id_3,course_id_1 course_id_2 course_id_3 course_id_4
user_id_4,course_id_1 course_id_2 course_id_3 course_id_4
user_id_5,course_id_1 course_id_2 course_id_3 course_id_4
user_id_6,course_id_1 course_id_2 course_id_3 course_id_4
user_id_7,course_id_1 course_id_2 course_id_3 course_id_4
user_id_8,course_id_1 course_id_2 course_id_3 course_id_4
user_id_9,course_id_1 course_id_2 course_id_3 course_id_4
user_id_10,course_id_1 course_id_2 course_id_3 course_id_4
```

predict and rank the courses a given user will purchase

Evaluation

output_subgroup_format

- **you can rank as many subgroups_id as possible**

```
user_id,subgroup
user_id_1,subgroup_1 subgroup_2 subgroup_3 subgroup_4
user_id_2,subgroup_1 subgroup_2 subgroup_3 subgroup_4
user_id_3,subgroup_1 subgroup_2 subgroup_3 subgroup_4
user_id_4,subgroup_1 subgroup_2 subgroup_3 subgroup_4
user_id_5,subgroup_1 subgroup_2 subgroup_3 subgroup_4
user_id_6,subgroup_1 subgroup_2 subgroup_3 subgroup_4
user_id_7,subgroup_1 subgroup_2 subgroup_3 subgroup_4
user_id_8,subgroup_1 subgroup_2 subgroup_3 subgroup_4
user_id_9,subgroup_1 subgroup_2 subgroup_3 subgroup_4
user_id_10,subgroup_1 subgroup_2 subgroup_3 subgroup_4
```

predict and rank the course subgroup a given user will purchase

Evaluation metrics

Mean Average Precision MAP@50

- It means **mean of AP@k** for all the users
- https://github.com/benhamner/Metrics/blob/master/Python/ml_metrics/average_precision.py

$$\text{AveP} = \frac{\sum_{k=1}^{n} (P(k) \times \text{rel}(k))}{\text{number of relevant documents}}$$

$$precision@k = \frac{tp}{k}$$

1. more correct courses in top-k results
2. higher ranks for correct courses

Challenge Leaderboard

- **Hahow_course challenge -- Seen Domain**
  - https://www.kaggle.com/competitions/2022-adl-final-hahow-seen-user-course-prediction
- **Hahow_subgroup challenge -- Seen Domain**
  - https://www.kaggle.com/competitions/2022-adl-final-hahow-seen-user-topic-prediction
- **Hahow_course challenge-- Unseen Domain**
  - https://www.kaggle.com/competitions/2022-adl-final-hahow-unseen-user-course-prediction
- **Hahow_subgroup challenge-- Unseen Domain**
  - https://www.kaggle.com/competitions/2022-adl-final-hahow-unseen-user-topic-prediction

Attention

- **DO NOT CHEAT!**
- **DO NOT TRY TO FIND THE LABELS OF THE TEST SET.**
- You must provide code to reproduce your model predictions
- You can use any other public datasets and models
- Please do not make extra submission personally
- Your team name should be `team_{第幾組}_xxxx(xxx可隨便取名不用學號)`
- `sign the NDA in COOL and we will give you the data permission`

Gradings

Grading (35%)

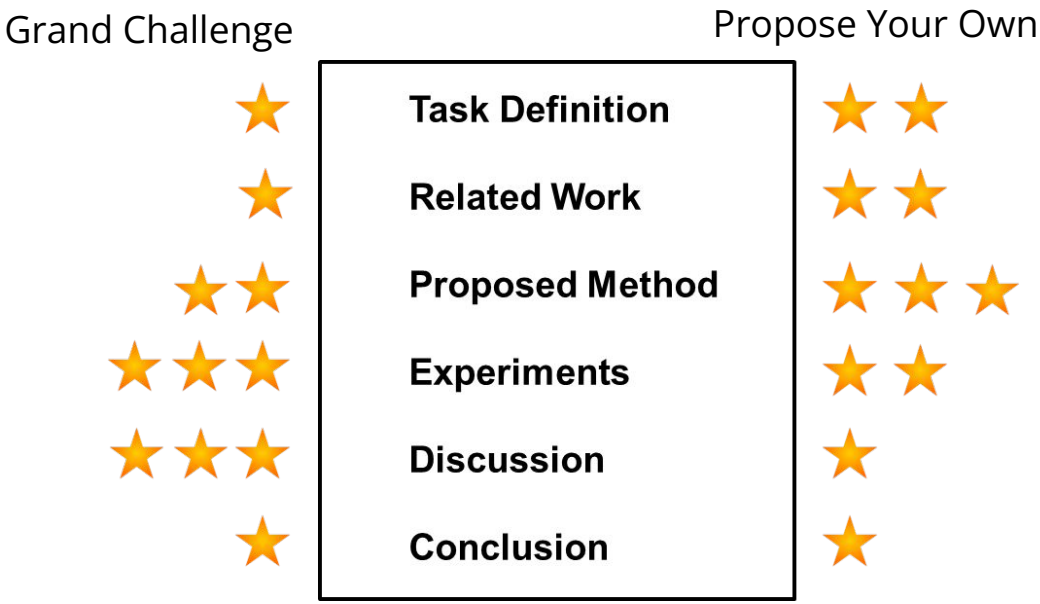
- Oral Presentation (10%)
- Report & Code (12%)
- Performance (10%)
  - Grand challenge: leaderboard performance
  - Choose your own: comparison with current SOTA
- Participation (3%)

Oral Presentation (10%)

- Video recording
  - Duration : 8-10 minutes
  - Note: introduce yourself in the beginning of the video
    - Presenting from all members is highly recommended
- Submission: submit a YouTube Link to Cool by 2023/1/2 23:59
- The grade mainly focuses on model novelty, clarity, and result analysis

Report and Code (12%)

- Wrap-up report
  - Content
    - Abstract
    - Introduction
    - Related work
    - Approach
    - Experiments
    - Discussion
    - Conclusion
    - Work Distribution
- Code w/ README
- Submit to COOL by 2023/01/05 23:59



Performance for Grand Challenge (10%)

- course seen leaderboard (3%)
- subgroup seen leaderboard (3%)
- course unseen leaderboard (2%)
- subgroup unseen leaderboard (2%)
- The score is based on ranking of the test set on 2023/1/2 23:59
  - Top 1~5: 3 points
  - 6~10: 2.5 points
  - 11~30: 2 points
  - 30+: 1.5 points
- 0 point if we can’t reproduce your submission!

不一定會完全按照名次硬性給分
如果大家結果都很接近也可能給同樣的分數

Participation (3%)

- Each student ask at least 1 question to at least 3 teams (1.5%)
  - Videos will be submitted to COOL for everyone access
  - Questions should be asked under the videos at COOL
  - Due on 2023/01/05 23:59
- Each team should reply all questions (1.5%)
  - Due on 2023/01/06 23:59
  - The team which receives most questions will get additional score
- Note
  - DON'T ask the repeating questions
  - DON'T ask the questions to your own team

Q&A