

know
the
rules

Course Logistics
Feb 21st, 2017

Intelligent Conversational Bot

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國立臺灣大學
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Course Logistics

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- Instructor: 陳縉儂 Yun-Nung (Vivian) Chen
- Time: Tuesday, 9:10-12:10
- Location: CS Building (德田) R102
- Website: <HTTP://S105-ICB.VIVIANCHEN.IDV.TW>
- Slides uploaded before each lecture

Always check the up-to-date information from the website or FB group

Course Goal

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- The students are expected to understand
 1. how to build a task-oriented conversational bot
 2. how to leverage available resources and design a unified framework for a system
 3. how each component evolves, from rule-based, to machine learning, and then to deep learning, and
 4. what the challenges are and how to resolve them

Pre-requisites

- Course
 - Requirement: programming
 - Preferred: probability, statistics, college-level calculus, linear algebra
- Programming
 - Proficiency in Python
 - GitHub; version control for teamwork; all milestones will be handed in via GitHub

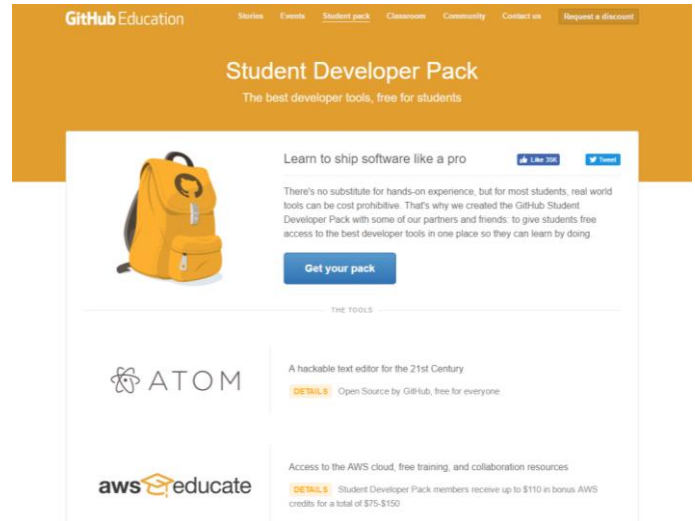


GPU and workstation are NOT provided, so please consider your available resources for taking this course

GitHub Student Pack

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- The [student plan](#) provides unlimited private repositories
 - ▣ make your assignments private before the due date
 - ▣ make them public afterwards



The screenshot shows the GitHub Education website's landing page for the Student Developer Pack. The page has an orange header with the GitHub Education logo and navigation links: Stories, Events, Student pack, Classroom, Community, Contact us, and Request a discount. The main heading is "Student Developer Pack" with the subtitle "The best developer tools, free for students". Below this is a section titled "Learn to ship software like a pro" with social media share buttons for LinkedIn (20k likes) and Twitter (Tweets). A yellow backpack icon is on the left. The text explains that the pack provides access to the best developer tools for free to help students learn by doing. A blue "Get your pack" button is prominent. Below this is a section titled "THE TOOLS" with two featured items: 1. ATOM: A hackable text editor for the 21st Century, Open Source by GitHub, free for everyone. 2. AWS Educate: Access to the AWS cloud, free training, and collaboration resources. Student Developer Pack members receive up to \$110 in bonus AWS credits for a total of \$75-\$150.

Grading Policy

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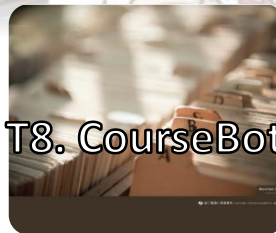


- Group Project (3-5 persons/group)
 - ▣ 4 Milestone Assignments: 15% x 4 = 60%
 - GitHub code w/ README (with demo)
 - Details will be provided
 - Team member grading
 - **Late policy: 3 free days/team; 25% off per day late afterwards**
 - ▣ Project Progress: 15%
 - Oral presentation and demonstration
 - ▣ Final Exhibition: 30%
 - GitHub code
 - Project document
 - Poster presentation
 - Cash and other awards
 - Company invited talk (Appier, etc.)

獎金高達
上萬元!!

Project Domains

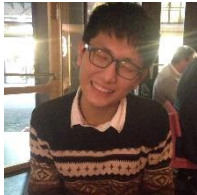
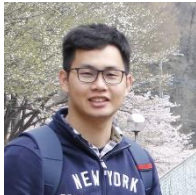
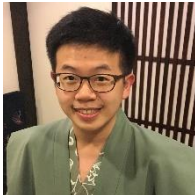
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Teaching Assistants

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- 2 TAs are responsible for each domain



- 2 TAs for domain-independent stuff



icb2017ta@gmail.com



T1: MusicBot



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□ Goal: music playing

□ 請幫我播蔡依林的倒帶

■ `play_song(singer="蔡依林", song="倒帶")`

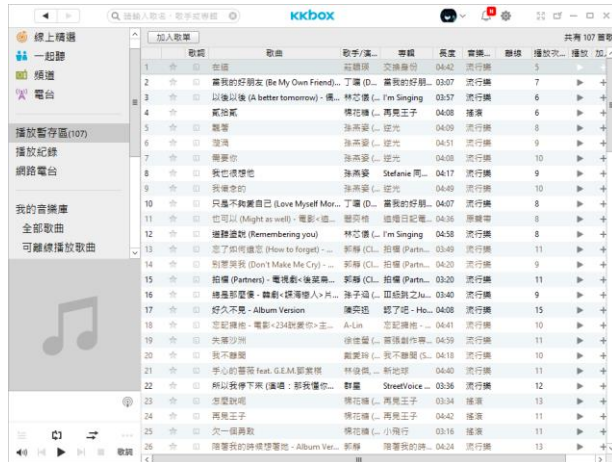
□ 請幫我播倒帶

■ `play_song(song="倒帶")`

□ 我要聽吳克群

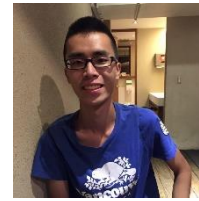
請問你要周杰倫的還是蔡依林的?

請問你要"吳克群"這首歌?
還是吳克群為歌手的歌?





T2: FoodBot



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□ Goal: reserve the restaurant

□ 我想訂位古亭的西堤

- request_revervation(location="古亭", restaurant="西堤")

□ 我想訂陶板屋

- request_reservation(restaurant="陶板屋")

□ 我要找日式buffet的餐廳

- find_restaurant(foodtype="日式", restauranttype="buffet")

請問你要哪個地點的?

請問有價位限制嗎?



T3: DSBot



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□ Goal: finding the store for users

□ 去哪裡買NIKE的球鞋

- `find_location(brand="NIKE", item="球鞋")`

□ 肉類在哪裡有賣

- `find_location(item_category="肉類")`

□ 我要買包包

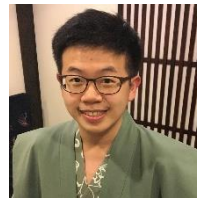
- `find_item(itemcategory="包")`

你問你想要哪個樓層?

請問有品牌偏好嗎?



T4: TVBot



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□ Goal: finding the channel/video for users

□ 我要看來自星星的你第一集

■ `play_video(drama="來自星星的你", episode="第一集")`

□ 我要看流星花園

■ `play_video(drama="流星花園")`

□ 我要找全智賢的劇

■ `Find_video(actress="全智賢")`

請問你要韓劇還是台劇?

請問想找哪個年份的?



T5: TelecomBot



□ Goal: finding the service

□ 我要查這個月的手機帳單

- show_check(period="這個月", device="手機")

□ 我要申請兩周後的漫遊

- Apply_interdataplan(period="兩周後")

□ 我要辦手機上網

- apply_data(device="手機")

請問你要去哪個國家?

請問需要多少上網流量?

The screenshot shows the main interface of the '中華電信客服 APP'. At the top, there's a header with the app name and a search bar. Below that, there are several service tiles with icons and text descriptions. On the right side, there are vertical banners for 'HiNet網路數據業務' and 'HiNet網路服務專線'. The interface is clean and user-friendly, with a blue and white color scheme.



T6: DoctorBot

□ Goal: finding the suitable division for registration

▣ 我想掛號古醫師的骨科

■ request_registration(division="骨科", doctor="古醫師")

▣ 我想看痘痘

請問你要掛號皮膚科嗎?

■ request_registration(symptom="痘痘")

▣ 我頭痛要看哪一科

請問有流鼻水嗎?

■ find_division(symptom="頭痛")

網路預約掛號系統

■ 當日情況查詢查詢
■ 就醫小提示

■ 醫院資訊公告(使用)
■ 醫療教育研習類

- 內科系
- 內科部
 - 內科部
 - 內科部
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- 外科系
- 外科部
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- 兒童門診
- 小兒部
 - 小兒部
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- 中心門診
- 血液科
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 - 血液科
 - 血液科
 - 血液科
 - 血液科
 - 血液科
 - 血液科
- 其他科系
- 檢驗室
 - 檢驗室
 - 檢驗室



T7: FinBot



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□ Goal: providing financial service

□ 哪張信用卡有新貴通會員卡

- `find_card(ppcard="True")`

□ Google財報如何

- `find_finreport(company="Google")`

□ 我想轉500塊給Vivian

- `request_transfer(amount="500", receiver="Vivian")`

請問你要哪一期的財報?

請問從哪個帳戶轉?





T8: CourseBot



□ Goal: course registration (or review searching)

■ 我想修陳縉儂的智慧對話機器人

■ register_course(lecturer="陳縉儂", course="智慧對話機器人")

■ 哪些課跟機器學習有關

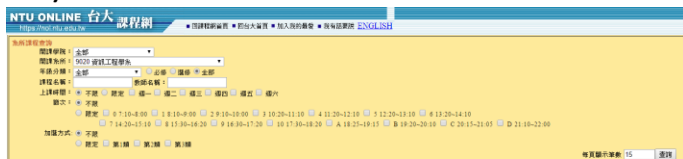
■ find_course(topic="機器學習")

■ 李宏毅老師開的課評價如何

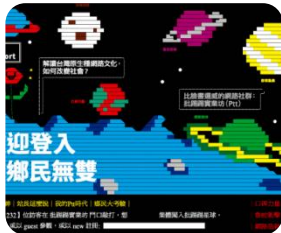
■ find_review(lecturer="李宏毅")

請問你要哪個系開設的?

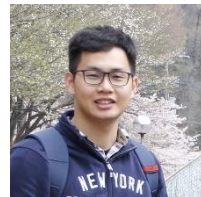
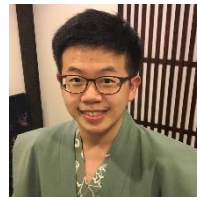
請問你是問哪一門課?



| 課號 | 課程對象 | 課程 | 學分 | 課程種類 | 學年 | 必修 | 修課學分 | 修課方式 | 修課時間 | 修課人數 | 選擇限制條件 | |
|-------|------|----------|----|-------------|----|----|-------|------|------|------|--------|--------------|
| 65470 | 資訊系 | CSIE3121 | 01 | 獨立 | 3 | 必修 | 25600 | 修年 | 必修 | 修年 | 3 | CS1.4-C(102) |
| 47133 | 資訊系 | CSIE3121 | 02 | 獨立 | 3 | 必修 | 25600 | 修年 | 必修 | 修年 | 2 | CS1.4-C(102) |
| 79416 | 資訊系 | CSIE3130 | 01 | 專業 elective | 3 | 必修 | 34700 | 修年 | 必修 | 修年 | 2 | CS1.4-C(102) |
| 68371 | 資訊系 | CSIE3130 | 02 | 專業 elective | 3 | 必修 | 34700 | 修年 | 必修 | 修年 | 2 | CS1.4-C(102) |
| 88481 | 資訊系 | CSIE3132 | 03 | 專業 elective | 2 | 必修 | 37500 | 修年 | 必修 | 修年 | 2 | CS1.4-C(102) |



T9: PTTBot



□ Goal: forum finding and functional service

□ 我要推++

- push_comment(content="++")

□ 我要找討論劇的板

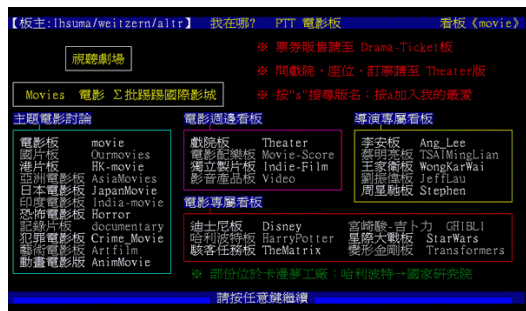
- find_forum(topic="劇")

□ 我要找三個月內討論較多的電影文

- show_post(period="三個月內", forum="電影")

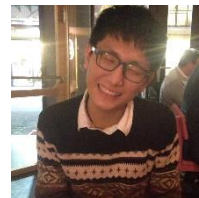
請問你要韓劇日劇還是台劇?

請問你是要推文最多的嗎?





T10: OnlineshopBot



□ Goal: find item pages

□ 我要Dyson V6吸塵器

- find_itempage(item="吸塵器", brand="Dyson", model="V6")

□ 我要找高檔的吹風機

- find_itempage(item="吹風機", feature="高檔")

□ 我要找相關配件

- find_itempage(function="配件")

請問你有偏好哪個國家生產的嗎?



請問你是要吹風機的配件嗎?



Project Detail

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- Single domain
 - 2 groups allowed in each domain
 - can collaborate for better performance
 - grading is separate

加簽規定

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- 每一組
 - 3-5人
 - 必須至少有2人已選到課
 - 今晚午夜前寄信至 icb2017ta@gmail.com
 - 組員 (並註明已經選到課程的同學)
 - 填寫前述10個domain的志願序
- 此課程全部皆以組為單位，若組內有同學退選或停修，會直接影響到同組其他同學的loading及分數，故決定修課及分組時請特別注意。

High-Level Schedule

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| Week | Topic | Note |
|-------------|---|---------------|
| 1 02/21/17 | Introduction | |
| 2 02/28/17 | Break | Milestone 0 |
| 3 03/14/17 | Modular Dialogue System (Video Recording) | |
| 4 03/21/17 | Ontology and Database | |
| 5 03/28/17 | Language Understanding | |
| 6 04/04/17 | Break | Milestone 1 |
| 7 04/11/17 | User Simulation | |
| 8 04/18/17 | Automatic Speech Recognition (Guest Lecture) | |
| 9 04/25/17 | Dialogue State Tracking | |
| 10 05/02/17 | Dialogue Policy | Milestone 2 |
| 11 05/09/17 | Natural Language Generation (Video Recording) | |
| 12 05/16/17 | Progress Presentation & Demonstration | Milestone 3 |
| 13 05/23/17 | Evaluation | |
| 14 05/30/17 | Break | |
| 15 06/06/17 | Multimodality, Robustness, Flexibility | |
| 16 06/13/17 | System Expansion | |
| 17 06/xx/17 | Final Project Presentation Exhibition | Final Project |

Rules

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- Eating is allowed, because breakfast is really important!!



Any comment or feedback is preferred!! (speed, style, etc)



Asking questions is encouraged!!

