Liang-Yuan(Leo) Wu

✉ yuan.leowu@gmail.com | ⌂ https://binomial14.github.io | binomial14 | binomial14

Education

The University of Edinburgh(UoE) — *Edinburgh, United Kingdom*

VISITING STUDENT(NON-DEGREE) IN SCHOOL OF INFORMATICS, COLLEGE OF SCIENCE & ENGINEERING — *Sept. 2021 - Dec. 2021*

- Sponsored by Y.L. Lin Scholarship with 15,000 USD.
- Researched in the Centre for Speech Technology Research, advised by Prof. Hao Tang.

National Taiwan University(NTU) — *Taipei, Taiwan*

B.S. IN ELECTRICAL ENGINEERING, COLLEGE OF ELECTRICAL ENGINEERING & COMPUTER SCIENCE — *Sept. 2017 - Aug. 2021*

- GPA
  - Overall GPA: **4.0**/4.3
  - last 60 GPA: **4.22**/4.3
- Selected Courses
  - CS: Algorithms, Data Structure and Programming, Operating Systems, Introduction to Computer Networks, Web Programming, Linear Algebra, Discrete Mathematics, Probability and Statistics
  - ML: Machine Learning, Applied Deep Learning, Data Science, Natural Language Processing, Introduction to Digital Speech Processing

Research Experience

Speech Processing and Machine Learning Laboratory — *Taipei, Taiwan*

UNDERGRADUATE RESEARCHER, ADVISED BY PROF. LIN-SHAN LEE, AND PROF. HUNG-YI LEE — *Sept. 2019 - Aug. 2021*

- **Code-Switching Text Data Augmentation**
  - Researched on pre-trained multilingual transformer models, and its application on code-switching text generation.
  - Gave a poster representation with the topic "Code-switching Text Data Augmentation" in MLSS 2021, Taipei.
- **Automatic Speech Recognition system of Mandarin Chinese**
  - Researched on applying end-to-end ASR system in Mandarin Chinese.
  - Modified an English ASR system to Chinese ASR, and achieved reasonable WER.

Work Experience

Ucarer Inc. — *Taipei, Taiwan*

INTERN AI PLATFORM ENGINEER — *March, 2021 — Aug. 2021*

- Developed a backend operation system for the e-commerce platform, helping Sarcopenia patients to recover.
- Built a customer relationship management system to help evaluating and ranking the need of customers.
- Used PHP and mySQL for the operation system, flask and PyTorch for the customer relationship management system.

Dragoncloud.ai — *California, United State*

INTERN MACHINE LEARNING ENGINEER (REMOTE) — *May, 2020 — June 2021*

- Developed an AI classroom system that analyzed the proportion and the contents of English that was used during a class.
- Developed an accent scoring model that scores the quality of non-native English speakers' speakings.
- Used PyTorch and AWS transcribe to train and inference the models.

Industrial Cooperation Office Electrical Engineering Department — *Taipei, Taiwan*

ADMINISTRATIVE ASSISTANT — *Sept., 2019 — August, 2020*

- Designed and maintained the website of the office, for showing intern/work opportunities to 800+ NTUEE students.
- Held recruitment orientations to help matching students and enterprises.
- Used Javascript to build functions of the website.

Honors & Awards

2021	**Finalist**, Y.L. Lin Scholarship	*Y.L. Foundation*
2021	**Honorable Mention**, AI CUP Medical Dialogue Analysis Competition	*Aldea, Taiwan*
2020	**Finalist**, Outgoing Exchange Student Scholarship	*OIA, NTU*
2020	**Finalist**, Social Devotion Special Award	*NTU*
2020	**2nd Prize**, Undergraduate Innovation Award	*EE Dept., NTU*
2018	**Enterprise Award: E.SUN Bank**, 2018 MakeNTU	*EESA, NTU*

Teach Experience

Machine Learning(Spring 2021)
TEACHING ASSISTANT

Taipei, Taiwan
Feb., 2021 — June 2021

- In charge of the explainable AI project, gave an 1 hour lecture to help students get familiar with the topic.

Cornerstone EECS Design and Implementation(Spring 2020)
TEACHING ASSISTANT

Taipei, Taiwan
Feb., 2020 — June, 2020

- Compiled teaching materials that helped EE freshman students to build a path following automatic robot.

Selected Project

Diaglogue State Tracking & Natural Language Generation
RANK **1/21** TEAMS IN THE COURSE APPLIED DEEP LEARNING

June 2021 - July 2021

- There are two tasks in this project. The DST task is to predict the dialogue state based on the previous context, and the NLG task is to generate engaging chit-chat to enhance users' experience.
- We achieve top 5 in the leaderboard of DST, and **rank 1** in NLG task by human evaluation.

NTU Course Selection System 2.0
AN IMPROVED VERSION OF THE SCHOOL'S COURSE SELECTION SYSTEM

Dec. 2020 - Jan. 2021

- Improved the origin version of course selection system by adding useful functions, including advanced searching, timetable managing and commenting.
- Used React as the frontend framework, RESTful API and MongoDB as our backend.

Automatic Forehead Thermometer
DEPLOYED ACROSS THE CAMPUS TO HELP REDUCE THE THREAT OF THE PANDEMIC

Mar. 2020 - Apr. 2020

- The system can automatically identify personnel and record the forehead temperature, which help the access control of all buildings in NTU.
- Won the Social Devotion Special Award by the chancellor of NTU, Dr. Chung-Ming Kuan.

Light Dance
PERFORMED AT THE OPENING NIGHT OF 2020 NTU ART FESTIVAL

Jan. 2020 - Oct. 2020

- An embedded system with raspberry pi, EL wires and LED strips, allow dancers' suits to change with the music.
- Invited to perform at the Night of NTUEE, the VLSI/CAD Symposium and the NTU Art Festival.

Leadership

2020 MakeNTU Makeathon
GENERAL COORDINATOR

Taipei, Taiwan
July. 2019 - Oct. 2020

- Led a team of over 80 members to hold a 2 day nationwide Makeathon with 150 participants.
- Collaborated with Ministry of Education, and 10+ international companies including ARROW and GOOGLE, and have 50,000 USD in sponsorship.

Academic Department of NTUEE Student Association
DIRECTOR

Taipei, Taiwan
June 2019 - June 2020

- Led a team of over 40 students to provide academic services to the 800+ undergraduates in NTUEE, including university fairs and research competitions
- Maintained an openlab, **Makerspace**, assisting students with side projects by providing 3D printing, laser cutting and tutorials of 10+ kinds of evaluation boards.

Basketball Team, Department of EE
CAPTAIN

Taipei, Taiwan
June 2019 - June 2020

- Led and coached a basketball team of more than 30 student players three times a week.
- Won 2nd place and 4th place in NTU College Freshman Basketball Cup for two consecutive years.

Skills

Programming	Python, C/C++, Javascript, Node.js, PHP
Deep Learning	PyTorch, Transformers, Keras
Web Development	React, HTML5, CSS, MongoDB, GraphQL, Laravel, MySQL, Flask
Languages	English(fluent), Mandarin(native)