

# CHUN-YAO (JIM) CHANG

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## EDUCATION

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### National Taiwan University (NTU)

Sep. 2018 – June 2022

*Bachelor of Science in Computer Science and Information Engineering (CSIE)*

*Taipei, Taiwan*

- Overall GPA: 4.14/4.3, Last 60 GPA: 4.24/4.3,

## WORK EXPERIENCE

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### Microsoft

July 2021 – Present

*Software Engineer Intern in Azure Hardware and System Infrastructure (AHSI) Team*

*Taipei, Taiwan*

- Implementing a full-stack application to automate the procedure of stress testing, which enables engineers to stress multiple servers simultaneously and monitor the status through rack managers
- Optimized Kusto and MSSQL database procedure to expedite data fetching efficiency by 17% and the amount of data from 10M to 100M+
- Reconstructed the Azure data dashboard to help engineers analyze the Azure hardware event log

### Funpodium

July 2020 – Sep. 2020

*IT Intern*

*Taipei, Taiwan*

- Implemented a decision-tree model to determine the order and type of advertising based on user's behavior, which boosted the user return rate by 16%
- Collected application logs from company's apps and constructed a dashboard to visualize the user flows of apps

### NTU CSIE Network Administration and System Administration Team

Sep. 2020 – June 2022

*Section Chief, Wireless Services, Network Administration Division*

*Taipei, Taiwan*

- Led a 4-man team to maintain and troubleshoot routers and wireless access points of department CSIE to ensure stable and secure wireless connection
- Managed the ELK stack system in CSIE department to store the event logs from other devices
- Conducted a large-scale documentation update and a cleanup of existed setting of Radius and Zone Director

## RESEARCH EXPERIENCE

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### Speech Processing and Machine Learning Lab

Feb. 2022 – Present

*Advisor: NTU, Professor Hung-Yi Lee*

*Taipei, Taiwan*

- Collaborating with **Professor Hao Tang, University of Edinburgh**
- Member of 2022 Eighth Frederick Jelinek Memorial Summer Workshop in Johns Hopkins University (join virtually)
- Researched different compression methods on self-supervised speech models
- Proposed a new model architecture that achieve similar performance to state-of-the-art model while reducing the training time by 30% and VRAM consumption by 50%

### Machine Intelligence and Understanding Lab

Feb. 2021 – Jan. 2022

*Advisor: NTU, Professor Yun-Nung (Vivian) Chen*

*Taipei, Taiwan*

- Researched natural language processing (NLP), with focus on dialogue state tracking
- Leveraged controllable counterfactuals data augmentation to improve accuracy of baseline model by 7% in accuracy
- Investigated the possibility to conduct membership inference attack on NLP translation model

## PUBLICATIONS

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Tzu-Quan Lin, Tsung-Huan Yang, **Chun-Yao Chang**, Kuang-Ming Chen, Tzu-hsun Feng, Hung-yi Lee, Hao Tang, "Compressing Transformer-based Self-Supervised Models For Speech Processing", submitted to *2023 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*

Available: <https://arxiv.org/abs/2211.09949>

## HONORS AND AWARDS

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### Skull Fracture Detection Competition, Honorable Mention

*Top 25%, ranked 6/42*

Jan. 2022

*Deep01*

### CareerHack Hackathon, Honorable Mention

*Final 12 out of 100+ team*

Jan. 2021

*Microsoft and TSMC*

### Dean's List Award

*Awarded to top 5% of class each semester*

Feb. 2020

*National Taiwan University*

## TEACHING ASSISTANCE EXPERIENCE

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### Machine Learning

*NTU EE Elective Course*

Spring 2022

*Taipei, Taiwan*

- In charge of the course executive plan for the Ministry of Education, Taiwan
- Raised budget subsidy for US\$8000+ from the Ministry of Education
- Designed assignments on BERT and hosted a Kaggle competition

### Machine Learning (English Class)

*NTU EE Elective Course*

Spring 2021

*Taipei, Taiwan*

- Held weekly TA hours for international students to ensure students had a clear understanding of the course
- Collaborated with other TAs to produce video materials for international students
- Established audio translation pipeline to ensure timely delivery

### Network Administration and System Administration

*NTU CSIE Elective Course*

Spring 2021

*Taipei, Taiwan*

- Planned assignments on topics related to wireless network and its applications
- Ensured freshmen in wireless team were familiar with department's wireless network system

## SELECTED PROJECTS

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### Skull Fracture Detection | *Python*

Jan. 2022

- Integrated the architecture of YOLO and CenterNet to detect the area of skull fracture, which yielded 64% accuracy in F1 score

### Sports Team System | *Node.js, React.js, GraphQL*

June 2021

- Built a full-stack system to manage the badminton team
- Improved the efficiency of the rental of badminton courts

### Don't Touch the White Tile | *Java*

June 2021

- Built a Java music game from the game of the same name
- Structured the game with objected-oriented design such as open-closed principle to achieve great extensibility

### Travel Recommendation Chat Bot | *Node.js, Microsoft Azure Service*

Jan. 2021

- Designed a chat bot that recommended user where to travel based on user's input text
- Used Microsoft Bot Framework as backbone and utilized LUIS to provide human-like interaction
- Sponsored by Microsoft to complete the project after CareerHack hackathon

## LEADERSHIP / EXTRACURRICULAR

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### SCAP Alumni

*Member*

Sep. 2021 – Jan. 2022

*Taipei, Taiwan*

- Collaborated with consultants from Boston Consulting Group and Garena
- Played a role of consultant that provided insights and solutions to the clients
- Boosted the traffic of client's website from 5M to 10M via SEO

### Department Badminton Team

*Captain*

Jan. 2020 – Aug. 2021

*Taipei, Taiwan*

- Organized weekly practice and managed general affair of team of 30+
- Led team to win 2020 and 2021 National Computer Science Cup Championship