



參與國際頂尖會議 促進學術交流

文稿整理 / 林珮雯

為擴展青年國際視野，本院鼓勵師生參與國際會議等學術活動，以瞭解國外學術現況，進而提升本院研究水準。本院邀請幾位參與其中同學分享心得如下：

發表論文： ShuttleNet: Position-aware Fusion of Rally Progress and Player Styles for Stroke Forecasting in Badminton

作者： Wei-Yao Wang, Hong-Han Shuai, Kai-Shiang Chang, Wen-Chih Peng

指導教授： 彭文志老師 帥宏翰老師

國際會議名稱： 第三十六屆 AAAI Conference on Artificial Intelligence (AAAI 2022)

該會議重要性： AAAI 為人工智慧中頂尖的國際會議之一，今年一共有約 9020 篇有效投稿，其中有 1349 篇論文被接受，接受率約為 15%。此會議有多種類型的主题，包含電腦視覺、自然語言處理與資料探勘分析等。

王威堯同學心得分享：

這篇是我第一篇被 A 級國際會議的論文，本來是我的碩論，但因為投稿上也促使我決定要申請逕博攻讀博士學位。此研究為根據羽球選手過

去的賽事資料，設計兩個考慮球種與位置關聯性的編碼器 - 解碼器架構，分別提取回合進展與球員風格，並在每一拍動態地考慮這些資訊的重要性，以預測選手們接下來可能會打的球種及位置分佈。很開心能在 2021 年發表兩篇成果，將羽球分析的成果推廣給世界看到。

發表論文： Reinforced Few-Shot Acquisition Function Learning for Bayesian Optimization

作者： Bing-Jing Hsieh, Ping-Chun Hsieh, Xi Liu

會議名稱： Neural Information Processing Systems (NeurIPS), 2021

會議重要性： NeurIPS 於 1987 年首次舉辦於加拿大，為機器學習領域中最重要的會議之一，在 Neurips 2021 中共有 9122 篇論文投稿，其中有 2344 篇被接受，接受率約為 26%。

謝秉瑾同學心得：

十分感謝老師在論文寫作和技術方面的指導與幫忙，這次是我第一次投稿國際會議，在寫作上遇到許多瓶頸，老師也不厭其煩地告訴我要如何更好的描述我們的論點；研究過程中也遇到許多挫折，多虧有老師熱心的指導下引導我解決了

許多難題；在論文被審查時，接受了許多審查人專業的建議讓我們的論文更加完整，最後使得我們的論文能夠被國際頂尖的會議接受，也讓我學習到許多事物。

發表論文： Exploring the Long Short-Term Dependencies to Infer Shot Influence in Badminton Matches

作者： Wei-Yao Wang, Teng-Fong Chan, Hui-Kuo Yang, Chih-Chuan Wang, Yao-Chung Fan, Wen-Chih Peng

指導教授： 彭文志老師

國際會議名稱： 第二十一屆 IEEE International Conference on Data Mining (ICDM 2021)

該會議重要性： ICDM 為資料探勘中頂尖的國際會議之一，今年一共有約 990 篇有效投稿，其中有 198 篇論文被接受，接受率約為 20%。此會議有多種類型的資料探勘主题，包含深度學習、資料庫、圖形識別等。

王威堯同學心得分享：

這是我第一篇成功投稿的一作國際頂級會議論文，收到錄取通知的時候也感到非常興奮。本來以為可以前往紐西蘭參加會議，結果因為疫情的影響改成線上舉辦，無法實際與其他學者面對面交流。報告也因此改成先錄影再現場進行問答，但因為我剛好是該會議時期的最後一組，輪到我的報告時人就比較少，所以也少了可以跟很多人交流的機會。但是我有去聽其他學者的成果分享，第一次提問讓我覺得滿緊張也滿開心的。

發表論文： Unsupervised Point Cloud Object Co-segmentation by Co-Contrastive learning and Mutual Attention Sampling

發表作者： Cheng-Kun Yang, Yung-Yu Chuang and Yen-Yu Lin

指導教授： 莊永裕教授，林彥宇教授

國際會議名稱： IEEE International Conference on Computer Vision (ICCV 2021)

該會議重要性： IEEE ICCV 是電腦視覺領域的國際頂尖會議的其中之一，與 CVPR、ECCV 並列國際三大頂尖電腦視覺會議，ICCV 這次總共收到

了 6,236 篇論文投稿，僅錄取了 1,617 篇論文，錄取率約 25%。ICCV 審稿的要求極高，也因此收錄的論文具有頂尖的水準。

楊証琨同學心得分享：

ICCV 2021 主要議程分成口頭報告 (oral) 與海報報告 (poster)。很榮幸我們的研究被 Area chair 推薦 oral 的形式進行報告 (僅有 3% 投稿的 paper 獲選為 oral)。此篇論文探討無監督式的 3D 點雲分割任務，3D 點雲分割任務在模型學習的過程需要大量的標註資料，造成應用落地時的困難。我們嘗試利用跨點雲之間的異同性質，並運用現今流行的注意力機制，成功的在沒有任何標註的資料情況下，將若干個點雲中，相同類別的點分割出來。參加 ICCV 2021 的過程中，我學習到了如何與國際的頂尖學者互動、提問與交流，並試著從現有的文獻來探討具有潛力的研究課題。

發表論文： Exploring Cross-Video and Cross-Modality Signals for Weakly-Supervised Audio-Visual Video Parsing

發表作者： Yan-Bo Lin, Hung-Yu Tseng, Hsin-Ying Lee, Yen-Yu Lin, Ming-Hsuan Yang

指導教授： 林彥宇教授

國際會議名稱： Thirty-fifth Conference on Neural Information Processing Systems, (NeurIPS 2021)

該會議重要性： NeurIPS (前稱 NIPS) 為人工智慧與機器學習之頂尖會議，近年來因人工智慧相關領域蓬勃發展，例如，電腦視覺、文字語音處理...等。使其會議在所有電腦科學相關會議中影響力排名在第二名。本年度共有 9122 篇論文提交，其中有 2344 篇被接受，接受率為 26%。

林彥伯同學心得分享：

很高興可以參加 AI/ML 的頂級會議，雖然很可惜這次依然是線上開會，但也有不少篇有趣的論文報告可以觀賞。其中，也有不少機器學習理論與非電腦視覺相關的論文，可以讓平常都以閱讀電腦視覺的論文為主的我有不少開眼界的機會。雖然有時候作者不一定會在自己的海報區，但預錄的影片也多少有一點幫助，可以快速地知道現在其他領域的重要發展，或許有一天可以應用在自己的研究領域。



Communicating with Experts at Top Conferences

To broaden our college's horizon and improve the quality of the publications of research, we encourage our faculty members and students to participate in international conferences to understand the current Computer Science academia. We invited several students to share their experiences of joining international conferences as follows.

Paper: ShuttleNet: Position-aware Fusion of Rally Progress and Player Styles for Stroke Forecasting in Badminton

Authors: Wei-Yao Wang, Hong-Han Shuai, Kai-Shiang Chang, Wen-Chih Peng

Advisors: Wen-Chih Peng, Hong-Han Shuai

Conference: Conference on Artificial Intelligence (AAAI 2022)

The importance of this conference: The purpose of the AAAI conference is to promote research in artificial intelligence (AI) and scientific exchange among AI researchers, practitioners, scientists, and engineers in affiliated disciplines. This year, 9020 papers were reviewed and only 1349 papers were accepted, with an overall acceptance rate of 15%.

Reflection from Wei-Yao Wang:

This is my first paper that got accepted for a tier 1 international conference. It was originally my master's thesis, but the submission also prompted me

to apply for a Ph.D. degree. My research is to forecast what players will return the stroke based on the given strokes. We proposed ShuttleNet with two encoder-decoder architectures to extract rally conditions and players' styles respectively. Afterward, we fused these contexts by considering the importance of this informational dynamically on every beat. I was thrilled to publish two papers at international conferences in 2021 to bring the results of badminton analysis to the world.

Paper: Reinforced Few-Shot Acquisition Function Learning for Bayesian Optimization

Authors: Bing-Jing Hsieh, Ping-Chun Hsieh, Xi Liu

Conference: Neural Information Processing Systems (NeurIPS), 2021

The importance of this conference: NeurIPS was first held in Canada in 1987 and is one of the most important conferences in the field of machine learning. 9122 papers were submitted to NeurIPS 2021 and 2344 of them were accepted, with an acceptance rate of about 26%.

Reflection from Bing-Jing Hsieh:

I am very grateful to my professor. With his enthusiastic guidance, I was able to solve many problems since it was my first time to submit a paper to an international conference. For example,

I encountered many problems in writing, and my professor taught me how to better describe our arguments. When the paper was reviewed, I received many suggestions from reviewers, and finally our paper was accepted by a top international conference. Overall, I learned a lot through this process.

Paper: Exploring the Long Short-Term Dependencies to Infer Shot Influence in Badminton Matches

Authors: Wei-Yao Wang, Teng-Fong Chan, Hui-Kuo Yang, Chih-Chuan Wang, Yao-Chung Fan, Wen-Chih Peng

Advisor: Wen-Chih Peng

Conference: IEEE International Conference on Data Mining (ICDM 2021)

The importance of this conference: The IEEE International Conference on Data Mining (ICDM) has established itself as the world's premier research conference in data mining. This year, 990 papers were reviewed and only 198 papers were accepted, with an overall acceptance rate of 20%.

Reflection from Wei-Yao Wang:

I was very excited to receive the acceptance notice because this was the first paper I ever submitted successfully to a top international conference as the first author. However, I missed the chance to attend the conference and discuss with other scholars face to face in New Zealand since ICDM decided to hold online due to the ongoing COVID-19 circumstances around the world. The format of presentation has also changed to playing video recordings first, then conducting synchronized Q & A sections later. However, since I was in the last group in the session, there were fewer people attending my presentation. Nevertheless, I did listen to the results of other scholars, and I was very excited and happy to ask questions for the first time.

Paper: Unsupervised Point Cloud Object Co-segmentation by Co-Contrastive learning and Mutual Attention Sampling

Authors: Cheng-Kun Yang, Yung-Yu Chuang and Yen-Yu Lin

Advisors: Yung-Yu Chuang, Yen-Yu Lin

Conference: IEEE International Conference on Computer Vision (ICCV 2021)

The importance of this conference: IEEE ICCV is one of the top international conferences in the field of computer vision, along with CVPR and ECCV. ICCV received a total of 6,236 paper submissions and only 1,617 papers were accepted. The acceptance rate is about 25%.

Reflection from Cheng-Kun Yang

The main program of ICCV 2021 was divided into oral and poster presentations. We were honored to have our research nominated for oral presentations by the Area chair (only 3% of submitted papers are selected as oral presentation). This paper presents a new task, point cloud object cosegmentation, aiming to segment the common 3D objects in a set of point clouds. We formulate this task as an object point sampling problem, and develop two techniques, the mutual attention module, and co-contrastive learning, to enable it. Our method works on point clouds of an arbitrary object class. It is end-to-end trainable and does not need point-level annotations. During my participation in ICCV 2021, I learned how to interact, ask questions, communicate with leading international scholars, and try to explore potential research topics from the existing related work.

Paper: Exploring Cross-Video and Cross-Modality Signals for Weakly-Supervised Audio-Visual Video Parsing

Authors: Yan-Bo Lin, Hung-Yu Tseng, Hsin-Ying Lee, Yen-Yu Lin, Ming-Hsuan Yang

Advisor: Yen-Yu Lin

Conference: Thirty-fifth Conference on Neural Information Processing Systems, (NeurIPS 2021)

Reflection from Yan-Bo Lin

I am glad to attend this AI/ML conference. Although it was still held online, there were many interesting paper presentations. A lot of topics presented on that day related to machine learning theory and some of them were not related to computer vision fields. I was able to broaden my horizon because I usually read papers related to computer vision only. Although sometimes the authors were not in their own poster section, the pre-recorded videos were also quite helpful to quickly learn about the important developments in their fields. I hope I can apply this knowledge in my research one day.