

# 參與學術頂尖會議 躍上國際舞台

文稿整理／林珮雯

頂尖國際會議是來自世界各地的頂尖研究員與教授們參加的學術盛會，正是與同儕相互切磋、拓展國際視野的最好時機。本院鼓勵師生積極參與國際學術活動，進而為臺灣研究增加學術的能見度。以下邀請幾位參與國際頂尖會議的同學分享心得：

## 發表論文：Revisiting Domain Randomization via Relaxed State-Adversarial Policy Optimization

作者：Yun-Hsuan Lien, Ping-Chun Hsieh, Yu-Shuen Wang

指導教授：謝秉均老師、王昱舜老師

國際會議名稱：International Conference on Machine Learning, (ICML 2023)

該會議重要性：ICML 係頂級人工智慧會議，ICML 2023 共收到 6538 份投稿，其中 1827 份被接收，接收率約為 27.9%。

連云暄同學心得分享：感謝王昱舜老師和謝秉均老師的指導，我們對 robust RL 中常見的 domain randomization (DR) 進行了深入探討。當沒有 direct simulator access 時，如何直接隨機調整環境參數呢？我們提出一個很有趣的觀點：只需巧妙地對 state 進行 perturbation，即可達到與 DR 近乎相同的效果。也就是：Achieving DR without DR！很榮幸本研究獲得 ICML 肯定，歡迎對 RL 領域感興趣的朋友，不論是學弟妹或是業界學界先進，來信討論。

## 發表論文：Multimodal Prompting with Missing Modalities for Visual Recognition

作者：Yi-Lun Lee, Yi-Hsuan Tsai, Wei-Chen Chiu, Chen-Yu Lee

指導教授：邱維辰老師

國際會議名稱：IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR), 2023

該會議重要性：CVPR (Computer Vision and Pattern Recognition) 是一個重要的國際電腦視覺和模式識別領域的頂尖會議。每年都有來自世界各地的研究人員參加，發表他們在電腦視覺、

機器學習和影像處理等領域的最新研究成果。今年 CVPR 收到了 9155 篇投稿，並最後接受了 2360 篇，僅有 25.78% 的接受率，為電腦視覺領域中最頂尖的會議之一。

李懿倫同學心得分享：我深感榮幸我的研究被 CVPR 接受。我要由衷地感謝我的指導教授和共同指導老師的細心的指導。這是我第一次親自參加國際會議，心情感到既緊張又興奮。在參加會議的過程中，我不僅有機會學習到新知識，還從各種主題演講和研討會中了解了各個領域的最新發展情況。此外，我成功地現場展示了我的研究成果，與前來參觀的學者進行有價值的討論，且獲得了許多寶貴的回饋。參加這次 CVPR 國際會議對我學術研究的提升有莫大的幫助，我期待將來再次有機會參加這樣頂尖的會議。

## 發表論文：Robust Dynamic Radiance Fields

作者：Yu-Lun Liu, Chen Gao, Andreas Meuleman, Hung-Yu Tseng, Ayush Saraf, Changil Kim, Yung-Yu Chuang, Johannes Kopf, Jia-Bin Huang

國際會議名稱：IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR), 2023

該會議重要性：IEEE/CVF Conference on Computer Vision and Pattern Recognition, (CVPR) 是世界上最重要的電腦視覺與圖形識別領域的學術會議之一。以下是該會議的重要性的幾個方面：(1) 學術交流：CVPR 是學者和研究人員分享最新研究成果、討論新的理論框架和技術挑戰的重要平台。

它提供了一個環境，使來自不同背景和專業的人們能夠交流想法，推動電腦視覺和圖形識別領域的進步。(2) 創新技術的展示：CVPR 是展示和探索最新技術和應用的重要場所，例如機器學習、深度學習、圖像和視頻分析等。(3) 專業發展：參與 CVPR 可以增進專業知識，擴展網絡，並提供可能的職業發展機會。(4) 產學研合作：許多來自學術界和工業界的領先組織會參與 CVPR，推動產學研合作，以解決實際問題並將研究成果商業化。(5) 優質出版物：CVPR 會議的論文通常具有很高的質量，並且被視為該領

域的頂尖出版物，為參與者提供了在高影響力期刊和會議上發表工作的機會。(6) 新技術和新思想的孵化：CVPR 通常會展示最前沿的研究，並提供一個平台來評估和孵化新的技術和思想。通過這些活動和機會，CVPR 在推動電腦視覺和圖形識別領域的進步，以及促進相關研究和產業發展中起著關鍵作用。

劉育倫博士心得分享：參加 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 是一個令人開眼界的經驗。透過與頂尖學者和研究人員的交流，我獲得了寶貴的見解和新的研究思路。會議展示的前沿技術和實時演示讓我深感電腦視覺技術的強大和未來的可能性。與來自全球不同地區和機構的專業人士交流，擴展了我的專業網絡，並找到了未來合作的可能性。許多實際應用案例讓我更清晰地理解了如何將理論應用於解決實際問題。此外，會議也提升了我的交流和協作能力，並讓我深感激勵和挑戰。這次的參與經驗非常寶貴，讓我期待未來能再次參與，並在下一屆會議上展示自己的研究成果。

## 發表論文：LGCNet: Feature Enhancement and Consistency Learning Based on Local and Global Coherence Network for Correspondence Selection

作者：Tzu-Han Wu and Kuan-Wen Chen

指導教授：陳冠文老師

國際會議名稱：International Conference on Robotics and Automation (ICRA), 2023

該會議重要性：ICRA 是歷史悠久的機器人自動化學術組織之一，知名企業如 Apple、SONY 與百度等皆有參展。近期自駕車市場崛起，從這裡發表的內容也成為全球相關企業關注的焦點之一。

吳子涵同學心得分享：第一次參加國際會議，非常期待能與各研究領域的學者進行學術上的深入交流。在 poster section 時有許多與會者對於我的研究內容有興趣，進一步探討方法細節以及實驗成果，並提出新穎的想法與我討論，讓我收穫更多不同面向的思考。除此之外還有很多新穎的機器人展示，也是這個會議令人眼睛為之一亮的部分。

## 發表論文：Rectifying Skewed Kernel Page Reclamation in Mobile Devices for Improving User-Perceivable Latency

作者：Yi-Quan Chou, Lin-Wei Shen, and Li-

Pin Chang

指導教授：張立平老師

國際會議名稱：International Conference on Embedded Software (EMSOFT 2023)

該會議重要性：此會議為嵌入式暨即時系統領域的頂尖會議，可參照權威排名網站 CSRankings.org

周益全同學心得分享：很高興碩士的研究成果可以被國際頂尖會議 EMSOFT 接受！感謝研究過程中張立平老師的指導，才能讓我們的研究站上國際舞台。而實驗室同儕林緯與我一同思考問題並分擔實驗工作，才能讓研究順利完成。這次投稿過程讓我學到了不少東西，特別是在論文審查時，得到了來自世界各地優秀學者的建議，這讓我們能夠重新思考並改進我們的研究。雖然過程中有許多辛苦的地方，但這是一個很難忘且難得的經驗。

## 發表論文：Image-based Regularization for Action Smoothness in Autonomous Miniature Racing Car with Deep Reinforcement Learning

作者：Hoang-Giang Cao, I Lee, Bo-Jiun Hsu, Zheng-Yi Lee, Yu-Wei Shih, Hsueh-Cheng Wang, I-Chen Wu

指導教授：吳毅成老師

國際會議名稱：International Conference on Intelligent Robots and Systems (IROS) 2023

該會議重要性：IROS 是智能機器人和系統領域的國際頂尖會議。研討會的範圍涵蓋了機器人學、人工智能、自主系統、感知和感知控制、機器視覺、機器學習等領域。作為一個匯聚全球機器人領域頂尖研究者和工程師的重要會議，通過學術交流、技術展示和競賽等形式，推動了機器人技術的創新和發展，為機器人技術的應用和商業化提供了有力支持。

李頤同學心得分享：非常感謝一起參加比賽的戰友李政毅、施圍維。在團隊共同的努力下，我們最終有幸能在 AWS DeepRacer 這個國際賽事中包辦前三名，完成這看似不可能的目標。然而，除了在實務技術上的成長與磨練，也感謝老師與 Cao Hoang Giang 學長犧牲假期與休息時間，給予我們在論文寫作上的指導與幫助，使得論文在方法呈現與論述都能更加的嚴謹，並獲得發表的機會。



# Participating in Top Academic Conferences: Stepping onto the International Stage

Top international conferences are academic gatherings attended by top researchers and professors from around the world. It is the best opportunity to interact with others to broaden one's perspective. Our college encourages professors and students to actively participate in international academic conferences to increase the visibility of research from Taiwan. The following reflections are written by students who have participated in top international conferences to share their experiences:

## **Title: Revisiting Domain Randomization via Relaxed State-Adversarial Policy Optimization**

**Authors: Yun-Hsuan Lien, Ping-Chun Hsieh, Yu-Shuen Wang**

**Advisors: Dr. Ping-Chun Hsieh & Dr. Yu-Shuen Wang**

**International Conference: International Conference on Machine Learning, (ICML2023)**

**The Significance of the conference:** ICML is a top artificial intelligence conference. In 2023, a total of 6,538 submissions were received by ICML. Overall, 827 submissions were accepted, yielding an acceptance rate of approximately 27.9%.

### **The experience of Yun-Hsuan Lien:**

I would like to express my deep appreciation to Dr. Yu-Shuen Wang and Dr. Ping-Chun Hsieh for their guidance. We have delved into domain randomization (DR), a common concept in robust RL. Without direct simulator access, we discovered that simply introducing clever perturbations to the state can emulate the effects of DR. In other words, we're achieving DR without DR! We are honored that our research has been recognized by ICML. Anyone interested in the RL domain is very welcome to discuss and collaborate with us.

## **Title: Multimodal Prompting with Missing Modalities for Visual Recognition**

**Authors: Yi-Lun Lee, Yi-Hsuan Tsai, Wei-Chen Chiu, Chen-Yu Lee**

**International Conference: IEEE/CVF Computer Vision and Pattern Recognition Conference (CVPR), 2023**

**The Significance of the conference:** (Computer Vision and Pattern Recognition) is a prestigious international conference in the field of computer vision and pattern recognition. Every year, researchers from around the world attend to present their newest research findings in areas such as computer vision, machine learning, and image processing. This year, CVPR received 9,155 submissions and ultimately accepted 2,360 papers, with an acceptance rate of only 25.78%.

### **The experience of Yi-Lun Lee:**

I am highly honored that my research has been accepted by the top computer vision conference, CVPR, and I am very grateful for the guidance of my advisor and co-advisors. This is my first time attending an international conference in person, and I am both nervous and excited. Throughout my participation in the conference, I not only had the opportunity to learn new knowledge from thousands of accepted paper posters but also gained insights into the current developments across different fields from various keynotes, tutorials, and workshops. In addition, I successfully presented my research on-site, engaged in valuable discussions with scholars who stopped by to view my work and received valuable feedback. My experience participating in this top international conference has been highly beneficial, and I have gained a wealth of valuable knowledge from it. I look forward to the opportunity to attend such top conferences again in the future.

## **Title: Robust Dynamic Radiance Fields**

**Authors: Yu-Lun Liu, Chen Gao, Andreas Meuleman, Hung-Yu Tseng, Ayush Saraf, Changil Kim, Yung-Yu Chuang, Johannes Kopf, Jia-Bin Huang**

**International Conference: IEEE/CVF Computer Vision and Pattern Recognition Conference (CVPR), 2023**

**The Significance of the conference:** CVPR is one of the most important academic conferences in the world for the field of computer vision and image recognition. Here are several aspects of the conference's significance:

1. Academic experience sharing: CVPR serves as a crucial platform for scholars and researchers to share their newest research findings, discuss new theoretical frameworks, and address technical challenges. It provides an environment where individuals from different backgrounds and areas of expertise can exchange ideas. It enhances the progress in the fields of computer vision and image recognition.
2. Innovative technologies showcasing: CVPR is a significant venue for showcasing and exploring the latest technologies and applications, such as machine learning, deep learning, and image and video analysis.
3. Professional development: Participation in CVPR can enhance one's professional knowledge, expand networks, and offer potential career development opportunities.
4. Industry-academia collaboration: Many leading organizations from both academia and industry participate in CVPR to promote collaboration by addressing practical issues and commercializing research outcomes.
5. High-quality publications: Papers presented at the

CVPR conference are typically of high quality and considered top publications in the field. Participants are provided with opportunities to publish their work.

6. New technologies and ideas: CVPR typically presents cutting-edge research and provides a platform for evaluating and incorporating new technologies and ideas. Through these activities and opportunities, CVPR plays a crucial role in advancing the fields of computer vision and image recognition and fostering related research and industry development.

### **The experience of Dr. Yu-Lun Liu:**

Participating in the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) is an eye-opening experience. Through interactions with top scholars and researchers, I gained valuable insights and new research ideas. The cutting-edge technologies and real-time demonstrations showcased at the conference made me appreciate the power of computer vision technology and look forward to its future potential. Engaging with professionals from diverse regions and institutions around the world expanded my network and provided opportunities for future collaboration. Many practical application cases provided me with a clearer understanding of how to apply theory to solve real-world problems. Additionally, the conference enhanced my communication and collaboration skills. This motivating experience was incredibly valuable, and I look forward to participating again in the future.

## **Title: LGCNet: Feature Enhancement and Consistency Learning Based on Local and Global Coherence Network for Correspondence Selection**

**Authors: Tzu-Han Wu and Kuan-Wen Chen**

**Advisor: Dr. Kuan-Wen Chen**

**International Conference: International Conference on Robotics and Automation (ICRA), 2023**

**The Significance of the conference:** ICRA is one of the prestigious, long-standing academic organizations in the field of robotics and automation. Renowned companies like Apple, SONY, and Baidu have also participated in this conference. With the recent surge in the self-driving car market, the content presented at the conference has gained global attention from related companies.

### **The experience of Tzu-Han Wu:**

It was my first time attending an international conference. I was very excited to engage in in-depth academic discussions with scholars from various research fields. During the poster section, many attendees showed interest in my research and had further discussions on method details, experimental results, and we also exchanged some novel ideas. This eye-opening experience allowed me to gain diverse perspectives and insights. In addition, there were many innovative robot demonstrations, which were also a highlight of the conference.

## **Title: Rectifying Skewed Kernel Page Reclamation in Mobile Devices for Improving User-Perceivable Latency**

**Authors: Yi-Quan Chou, Lin-Wei Shen, and Li-Pin Chang**

**Advisor: Dr. Li-Pin Chang**

**International Conference: International Conference on Embedded Software (EMSOFT 2023)**

**The Significance of the conference:** This conference is one of the top conferences in the field of embedded and real-time systems. Please refer to the ranking website CSRankings.org.

### **The experience of Yi-Quan Chou:**

I am delighted that the research results of my master's thesis have been accepted by the top international conference EMSOFT! I would like to express my gratitude to Dr. Li-Pin Chang for his guidance during the research process. My lab member, Lin Wei, and I brainstormed, shared the workload, and completed the research together. The submission process has taught me a lot, especially during the paper review stage, where we received valuable feedback from distinguished scholars worldwide. This enabled us to reconsider and improve our research. Despite the challenges we faced along the way, this has been a valuable experience.

## **Title: Image-based Regularization for Action Smoothness in Autonomous Miniature Racing Car with Deep Reinforcement Learning**

**Authors: Hoang-Giang Cao, I Lee, Bo-Jiun Hsu, Zheng-Yi Lee, Yu-Wei Shih, Hsueh-Cheng Wang, I-Chen Wu**

**Advisor: Dr. I-Chen Wu**

**International Conference: International Conference on Intelligent Robots and Systems (IROS) 2023**

**The Significance of the conference:** IROS is a top international conference in the field of intelligent robots and systems. The conference covers a wide range of areas, including robotics, artificial intelligence, autonomous systems, perception control, computer vision, and machine learning. As a significant gathering of leading researchers and engineers in the robotics field, it promotes innovation and development in robotics technology through academic experience exchange, technical exhibitions, and competitions. It provides strong support for the application and commercialization of robotics technology.

### **The experience of I Lee:**

I'm very grateful to my lab members, Zheng-Yi Lee, and Yu-Wei Shih, who joined me in the competition. Through our collective efforts, we were fortunate to secure the top three positions in the international AWS DeepRacer competition, achieving what seemed impossible. With the growth and refinement of our technical skills gained from this competition, I'd like to express my gratitude to our advisor and fellow member, Cao Hoang Giang, who dedicated their holidays and rest time to provide guidance and assistance in paper writing. Their contributions ensured the methodology and presentation were more rigorous, and helped us the opportunity to publish it in a top conference