

2024 International Intelligent RoboSports Cup: Electrical and Computer Engineering Department's Robotics Achieves Outstanding Results Again

On April 19 to 21, Professor Ching-Chang Wong, Assistant Professor Chih-Cheng Liu, and Postdoctoral Researcher Yi-Chung Lin from the Department of Electrical and Computer Engineering led a team of 29 students to participate in the "2024 International Intelligent RoboSports Cup" hosted by the Ministry of Education at the National Kaohsiung University of Science and Technology. Continuing the team's legacy of excellence over the years, they achieved outstanding results with 14 gold, 2 silver, and 2 bronze medals.

The International Intelligent RoboSports Cup has been held for 13 years. Nearly 200 teams participated this year, comprising around 600 contestants and coaches. With 22 competitions, including adult-size and kid-size humanoid robot categories and an autonomous driving challenge, Tamkang University participated in 18 events and achieved outstanding results with 14 gold, 2 silver, and 2 bronze medals. Particularly noteworthy is the performance of the graduate student team in the adult-size humanoid robot category, which secured first place in all 6 events of the HuroCup: archery, marathon, weightlifting, obstacle run, and Sparta race. The undergraduate team also excelled, winning 5 gold medals (archery, basketball, marathon, weightlifting, and Spartan race), 2 silver medals (obstacle run and Spartan race), and 1 bronze medal (HuroCup) in the kid-size humanoid robot category. Furthermore, in the autonomous driving challenge, they obtained 3 gold medals (omnium, image recognition, obstacle run parking) and 1 bronze medal (HuroCup).

In addition to the adult-size robot competition, all other events were led by undergraduate students. Professor Wong stated that teamwork, time management, and adaptability are essential for students, but "the most important thing is the inheritance of technology." He mentioned that graduate students pass on their expertise to undergraduate students and continue to study on campus during summer and winter breaks. Apart from

maintaining technical proficiency, learning hardware and software is crucial, as it ensures good performance.

Pin-Chen Chou, a senior from the Department of Electrical and Computer Engineering, who has previous competition experience, shared, "We first cultivate the ability of our junior students to solve problems." This year, the approach adopted was to initially teach undergraduate team members how to operate the robots, ensuring they have a sufficient understanding of the robots and learn how to repair them. They seek assistance from senior students when encountering issues, enabling them to solve problems on the day of the competition independently. Pin-Ju Chen, a junior from the Department, mentioned, "After going through various trial and error processes, adaptability improves with learning efficiency, which is a very beneficial experience." Last year, senior students led the undergraduate team members and directly assisted them when problems arose. However, this year's approach has yielded better learning outcomes. She also sees this competition as an opportunity for peer learning and mutual improvement.

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Group photo of the Electrical and Computer Engineering Department's Humanoid Robot Team.

Yan-Peng Liu, a junior from the Department of Electrical and Computer Engineering, is participating in the ladder climbing of the Spartan Race for kid-size humanoid robots.



Li-Shan Huang, a sophomore from the Department of Electrical and Computer Engineering, is participating in the basketball event of the kid-size humanoid robot competition.

Awards Won by the Department of Electrical and Computer Engineering' s Robotics Team at the 2024 International Intelligent RoboSports Cup.

電機系機器人團隊於2024國際智慧機器人運動大賽獲獎資訊

比賽名稱／獲獎隊名	隊名／隊員
HuroCup – Kid Size: 全能賽(All Round): 第三名 (TKU5) 射箭(Archery): 第一名 (TKU6) 籃球(Basketball): 第一名 (隊名: TKU3) 馬拉松(Marathon): 第一名 (TKU5) 舉重(Weight Lifting): 第一名 (TKU7) 避障(Obstacle Run): 第二名 (TKU4) 斯巴達(Spartan Race): 第一名 (TKU2) 斯巴達(Spartan Race): 第二名 (TKU1) 競走(Sprint): X	TKU1: 葉婉柔(大二) TKU2: 劉延芃(大三) TKU3: 黃軍凱(大三)、黃莉珊(大二) TKU4: 陳品儒(大三) TKU5: 陳彥勳(大四) TKU6: 林幸慧(大二) TKU7: 陳雨昕(大二) TKU8: 陳虹蓁(大三) TKU9: 陳冠宇(碩一)、周品甄(碩一)、 陳致嘉(碩一)、林恩澤(碩二)、 張維軒(碩二)、呂浩睿(碩二)
HuroCup – Adult Size : (TKU9) 全能賽(All Round): 第一名 射箭(Archery): 第一名 籃球(Basketball): X 馬拉松(Marathon): 第一名 舉重(Weight Lifting): 第一名 避障(Obstacle Run): 第一名 斯巴達(Spartan Race): 第一名 足球罰踢(Penalty Kick): X	樹樹隊: 吳宜芳(大三)、王于蒨(大三)、 俞博云(大三)、黃慕華(大三) 已斷線: 林琮恩(大二)、劉瑋軒(大二)、 孫以衡(大二)、周秉毅(大二) 我感覺不太隊: 林張鎧(大三)、黃俊耀(大三)、 廖澄彥(大三)、班博榮(大三)
AutoRace: 全能賽: 第一名 (已斷線) 全能賽: 第三名 (樹樹隊) 第一分項(影像辨識): 第一名 (已斷線) 第二分項(避障停車): 第一名 (已斷線) 第三分項(SLAM地圖): X	

備註: X表示該獎項未得獎。

(資料: 電機系機器人團隊提供)