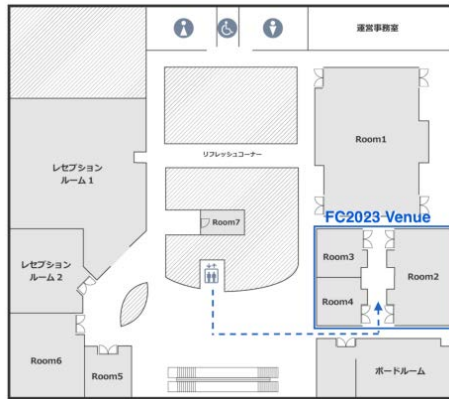


中國科技大學補助教師參加校外研習心得報告

2023 The 13th International Conference on Frontier Computing 於日本東京舉辦。這是由國際工程與科技學會中華民國分會主辦的研習會，自 2010 年起相繼的活動有:FC 2010 (Taichung, Taiwan), FC 2012 (Xining, China), FC 2013 (Gwangju, Korea), FC 2015 (Bangkok, Thailand), FC 2016 (Tokyo, Japan), FC 2017 (Osaka, Japan), FC 2018 (Kuala Lumpur, Malaysia), FC ABH 2019 (Taichung, Taiwan), FC 2019 (Kitakyushu, Japan), FC 2020 (Singapore, Online), FC 2021 (Online), 及 FC 2022 (Tokyo, Japan)。2023 年研討會活動日期為 7 月 10 日至 7 月 13 日。會議地點在東京台場國際會議中心(Ariake Central Tower Hall & Conference)三樓



Keynote Speech：塞爾維亞諾維薩德大學

重點關注 FL 範式的關鍵方面，並介紹其本質並舉例說明醫療和保健信息系統的特徵。這種 FL 學習範式對醫療體系具有重大影響力。

申請人報告時間為 7/12 上午，在 room1 會議室，主持人為 Yan Pei, University of Aizu, Japan。報告主題為: Applying Virtual Reality to Teaching the Law of Conservation of Energy in Physics。

以運用虛擬實境研發自然科學領域在教授能量守恆定律中重力位能與彈力位能之教材，透過虛擬實境沉浸式體驗帶給學生樂在學習的契機。



以虛擬實境的視覺體驗設計模擬三種星球重力場的情境，使學習者脫離現實的框架，藉此引導在不同的重力場下體驗能量守恆課程中位能與動能的轉換。

Evaluate
Compare pre- and post-learning examination to check whether students have achieved the learning goals.
21 students completed the course study.

Question	Pre-test Rate	Post-test Rate
1. Under the same condition of shape and height of the orbits one, if you take a roller coaster on the earth, the moon, and Mars, which planet will you go down the fastest?	65%	100%
2. Comparing the roller coaster moving to a height of 50 meters on the earth, the moon, and Mars, which planet has the greatest gravitational potential energy?	58%	92%
3. Raise a 5 kg object by 2 meters from the ground. if the gravitational acceleration is 9.8 m/s ² , how many joules is the potential energy of the object?	58%	81%

Conclusion

- Comparing the test results before and after learning, the immersive of virtual reality is used to explain the physical phenomena of the law of energy conservation, which can promote students' understanding of abstract formulas.
- The highly interactive visual situational experience greatly enhances the motivation of learning, which can increase the depth of exploration and increase the motivation of self-learning.

報告人簽章	單位主管簽章	人事室主任簽章
年 月 日	年 月 日	年 月 日

