

CS+X 跨界合作

2020 交大物聯網科技藝術節

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5G 將進入大眾的生活，因為 5G 的普及物聯網時代進入全新的階段，交大以物聯網為主題，舉辦「2020 交大物聯網科技藝術節」，於 2020 年 12 月 16 號到 30 號，在交大工三館及浩然圖書館外草皮展出，本次展覽的主題是對於網路的未來提出一種全新想像。以林一平教授的 IoTtalk 平台，作為此次物聯網與科技藝術實驗的接口，透過物聯網分別連結「馬達動力」、「智慧鏡裝置」、「LED 燈光裝置」，用網路傳輸動態數據、即時圖像、DMX 訊號等，呈現物聯網的多個面向。

此計畫邀請交大資工、應藝、傳播所共同合作，而交大應用藝術所所長許俊成教授表示「這是交大難能可貴的地方，通過不同系所的合作，創造出不同火花。」此外也邀請互動藝術團體「有電互動」製作 LED 動力裝置，共展出三組藝術裝置作品《手的延伸 掌的傳承》、《光柵風景 -- 飛進蒲公英裡面的鳥》、《鏡中幾何》。

本次藝術節的幕後功臣林一平教授表示，這個計劃的發想是源自校長希望布袋戲和科技做結合，「我們希望把人文藝術和互聯網科技做結合，並在校園發揚光大，也希望營造一個健康快樂的校園。」，林教授表示這是計劃最主要的目的，同時也特別感謝資訊學院提供場地。

策展人羅禾淋教授談及計劃的核心脈絡

IoTtalk，不同於過往的平台，IoTtalk 有很大的擴充性，更適合作為更新數據的推手。因不用思考運算只需輸入輸出便能處理，因此也成為科技應用或博物館展覽的一大助力。而這次舉辦的是一個示範型的展覽，雖然作品件數很少，但實驗了很多有趣的東西，例如戶外 LED 裝置。

這次傳輸使用的是 DMX512，同時也是劇場的規格，代表未來有很大的擴充性，甚至是布袋戲的手部數據，也可以透過 IoTtalk 及機械手臂重現。而這個傳輸不局限於數據，也能是多媒體如圖像，聲音、影像等。它是一種不同的互動藝術的前置，像鏡中的裝置，可以自行拼裝想要的圖案，送到裝置中心後，結合全部人的作品變成一個大型的創作，不但讓科技藝術的創作更多元，也讓民眾能一同參與創作，而這也是 IoTtalk 最有價值的地方。

「基本上藝術節有一點示範性質，藉由交大工理工背景的專長及技術，發展一些新的聯想，甚至是連接到 5G 的部分。」羅禾淋教授說道，由今年的科技藝術節做為開場白，讓大眾知道交大在在在做科技藝術。同時也表示明年將會再舉辦科技藝術節，屆時希望能讓更多學生參與，邀請更多像本次合作的友電互動設計公司，甚至是和校外的藝術家、創作者互動。讓交大作為目前全臺唯一做互聯網科技藝術成為其領域先鋒，並期盼引領更多人關注並投入在科技藝術中。



CS+X Cross Departmental Collaboration: 2020 NCTU IoT TechArt Festival



5G is becoming a noticeable and recordable fact among the general public. Because of the rapid popularization of 5G, the Internet of Things has entered a new stage. Chiao Tung University held the "2020 NCTU IoT TechArt Festival" on the Internet of Things. Taking place from December 16-30, 2020, the exhibition was located in the public space between Engineering Bldg 3 and National Yang Ming Chiao Tung University Library. Proposing a new imagination for the future of the Internet is the exhibition's main message. On top of Professor Yi-Bing Lin's IoTtalk platform as the interface between the Internet of Things and experiments in Art and Technology, "motor power", "smart mirror device", and "LED lighting device" are respectively connected through the Internet of Things. Dynamic data, real-time images, and DMX signals, etc., are simultaneously transmitted over the Internet, which presents multiple aspects of the Internet of Things.

This project was in cooperation with the Department of Computer Science, Institute of Applied Arts, and Institute of Communication Studies. Professor Chun-Cheng Hsu, the director of the Institute of Applied Arts, NCTU, said, "It is of great value for Chiao Tung University to ignite diverse sparks via team collaboration among involved departments." In addition, an interactive art group, Electricity Interaction, was invited to set up LED installations. Three sets of art installations, "Extension of the hand, Inheritance of the palm", "Optical grating Landscape-bird flying right into a dandelion", and "Geometry in the Mirror" were presented to the public.

Professor Yi-Bing Lin, the behind-the-scenes hero of this art festival, said that the idea of this project came from the President's wish to combine puppet shows with technology. "We hope to integrate humanities and art with Internet technology and glorify it on campus, while we build up a healthy and happy campus." Professor Lin said that this is the main purpose of the project. Meanwhile, he also expressed his gratitude to the College of Computer Science for providing the venue for this festival.

The Curator, Professor He-Lin Luo, talked about IoTtalk, the core of the project. Unlike the former platforms, IoTtalk possessed great scalability ensuring the best capability for updating data. Performing input and output without calculations, IoTtalk became a great help for technology applications or museum exhibitions. Although the number of art works is small, this festival, as a demonstration, has done some experiments with quite a few interesting things, such as outdoor LED installations.

The protocol used by this project is DMX512, a theater specification as well, which means that it is with great extensibility in the future. Even the gesture behavior of puppet shows can also be reproduced through IoTtalk and robotic arms. Moreover, this transmission is not only applied to data, but also to multimedia such as images, sound, and videos, etc. It is a front end of a different interactive art; for example, an installation in a mirror. You can assemble the desired patterns by yourself, send it to the installation center, and later combine all the works into a large-scale creation. It has not only diversified technology art creations, but also encouraged people to participate in joint creation, which is the most valuable part of IoTtalk.

"Basically, this art festival is sort of for demonstration purposes. With the expertise and technology of Chiao Tung University, new associations will be inspired, even connected to 5G." Professor He-Lin Luo said that the Technology Art Festival this year will serve as the opening remarks to declare to the public that Chiao Tung University is doing technology art. At the same time, he also expressed that there will be another technology art festival next year. He hopes to increase student participation, invite more Interactive Design companies, such as Electricity Interaction, and even interact with artists and creators outside the campus. He expects that Chiao Tung University, as the only university doing IoT technology art in Taiwan, will be a pioneer in this field and lead more people to pay attention and dedicate themselves to technology arts.