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Bimonthly Newsletter

Taipei Tech Post

National Taipei University of Technology

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Photo by Huang Ting-Lun, student of Taipei Tech Department of Cultural Vocation Development

With Crisis Comes Opportunities —

Taipei Tech Holds First Online Commencement Ceremony

As Taiwan imposed Level Three COVID-19 restrictions nationwide, the Taipei Tech commencement this year proceeded with recorded ceremony video, which premiered on June 12th. This year, Taipei Tech had 2,604 graduates. The ceremony video ended with a heart-warming song composed by the Graduate Student Association, as well as a collection of school songs sung by the alumni of Taipei Tech as their blessings for the graduates.

Taipei Tech President Wang Sea-Fue remarked that Taipei Tech alumni always have an excellent reputation among industries. "Our greatest strength is that we are eager to learn," said Wang. He noted that the pandemic has inevitably affected the job market, so graduates this year may not immediately be able to find the job that they want the most. Wang encouraged graduates to "accept the current situation and take on the challenge ahead of [them]," and to "start small and have faith." Wang believes that Taipei Tech graduates will all gradually work their way up to something bigger and greater.

Taoyuan City Mayor Cheng Wen-Tsan was invited to give remarks in the ceremony video. Cheng is a supporter of making Taoyuan Agricultural & Industrial Senior High School an affiliated school of Taipei Tech.

In his remark, Cheng commends the solid teaching of Taipei Tech and the many significant industry-academia cooperation projects that the university has established. Cheng also indicated that Taipei Tech's participation in the Asian Silicon Valley Agency has greatly propelled the project forward. The Asian Silicon Valley is a government-backed project in Taoyuan that aims to transform Taiwan into an Asian R&D hub.

"I am confident that the graduates of Taipei Tech will become the driving force of Taiwan's social and economic progress," said Cheng, "and they will create endless possibilities for themselves and for the country."

Chang Jui-Mei, president of the Taipei Tech Alumni Association, also gave an address in the video. She mentioned that the constraints brought about by the global pandemic can be a challenge and also an opportunity. "One can achieve more than one can imagine in an uncertain time like this," said Chang. She references her own experience and encourages the graduates to step out of their comfort zone and to keep learning and acquiring skills, so when the time comes, they will be fully ready to get on the road to success.

The Taipei Tech 2021 commencement video can be viewed on https://youtu.be/URGuNw0EvO4

Taoyuan City Mayor Cheng Wen-Tsan was invited to give remarks in the ceremony video

President Wang encouraged graduates to accept the current situation and take on the challenge ahead of them, and to start small and have faith

In the newly-released *2022 Quacquarelli Symonds (QS) World University Rankings*, Taipei Tech has again moved up in ranking. Still one of the world's top five hundred universities, Taipei Tech has taken a leap in the global ranking from 488 to 469. Among all the Taiwanese universities listed in the top five hundred by QS, Taipei Tech made the biggest improvement, and its domestic ranking has also risen from the eleventh to the ninth.

QS uses indicators such as academic and employer reputation, faculty-to-student ratio, research impact, and internationalization to assess university performance. This year, a total of 6,415 institutions were submitted for evaluation and 1,673 were analyzed. Twenty-five Taiwanese universities made it into the final list.

Taipei Tech President Wang Sea-Fue noted that the separate 2021 QS World University Rankings by Subject foreshadowed the university's rise in the 2022 global ranking. In the 2021 rankings by subject, Taipei Tech performed exceptionally well and climbed to 144 globally in the subject of Engineering & Technology. The university also showed a strong performance in other subjects including Chemical Engineering; Materials Science; Electrical & Electronic Engineering; Mechanical, Aeronautical & Manufacturing Engineering; Business & Management Studies; Computer Science & Information Systems; and Physics & Astronomy.

"This major leap in the university's ranking is a collective achievement made by all the faculty and students of Taipei Tech," said Wang, "and it is a demonstration of our longstanding hard work in developing interdisciplinary research."

As a university that always puts equal emphasis on theory and practice, Taipei Tech continuously makes great effort in research and development, as well as the output of papers, patents, and products related to key technologies.

Taipei Tech is recently planning on establishing an advanced technology institute that focuses on the integral research and development of energy, artificial intelligence, and semiconductors. This institute is the university's response to the global demand in industry for high-tech talent.

In addition, Taipei Tech has been running the Ministry of Education Higher Education Sprout Project for many years, and the university has received a total of TWD$260 million in funding for this project. The main goal of the Higher Education Sprout Project is to cultivate key competency, enhance industry-academia cooperation, and encourage interdisciplinary learning. With this project, Taipei Tech has been able to strengthen the pragmatic and innovative education of the university, which enables Taipei Tech to be listed as one of the world's top research institutes.

Taipei Tech Rises In Global Ranking, Among the World's Top 500 Universities

In the newly-released 2022 QS World University Rankings, Taipei Tech has taken a leap in the global ranking from 488 to 469

Taipei Tech and CSULA Student Teams Win Inclusive Design Awards

Taipei Tech students formed two teams with the students of the California State University, Los Angeles (CSULA) and participated in the SourceAmerica Design Challenge. The two teams, named the Zeno Effect and the Midas Touch, won the first and the second place respectively in the competition.

SourceAmerica is a U.S. nonprofit organization committed to improving the employment opportunities, economic empowerment, and upward mobility of people with disabilities. The organization hosts the SourceAmerica Design Challenge annually to promote inclusive design. The Design Challenge also aims to encourage students to utilize their STEM skills to develop concepts and prototype assistive technologies to provide workplace support for people with disabilities.

The Zeno Effect team designed a web-based tracking system that integrates facial and object recognition technology for manufacturing firms that employ assembly-line workers with disabilities. The system collects data along an assembly line to help managers identify potential choke points. The system also assists workers in identifying objects.

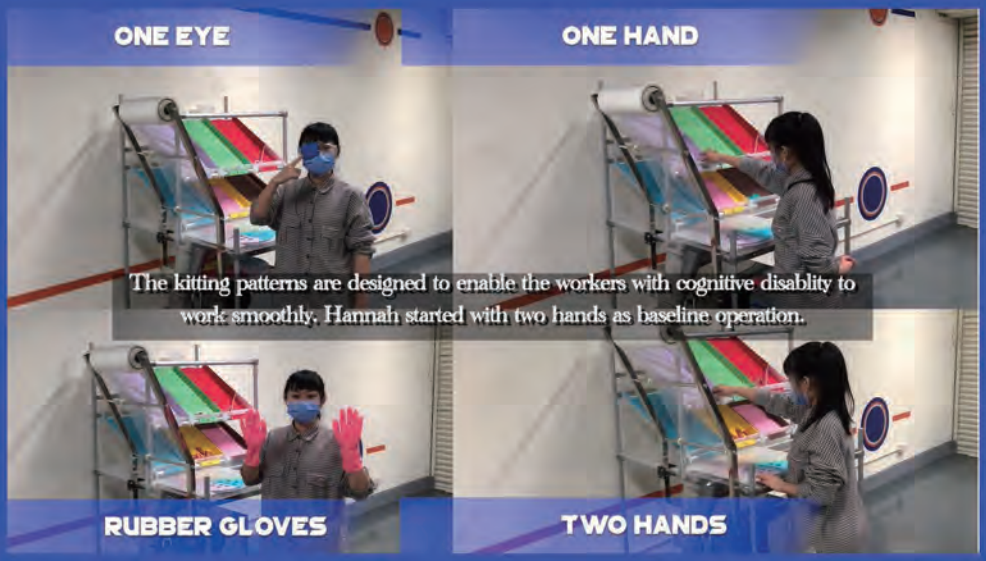
Mo Hui-Jun, a junior of Taipei Tech on the Zeno Effect team, noted that the target users of their system are workers and managers with limited mobility. "It is important to design from the user's perspective and to fully understand their needs," said Mo.

In addition to utilizing the skills and knowledge of data analysis that they learned at school, members of the Zeno Effect team also needed to learn to integrate the YOLO real-time object detection technology. According to Tsai Pei-fang, team adviser and Taipei Tech associate professor, the Zeno Effect team was able to win first place because they have produced a complete and usable system.

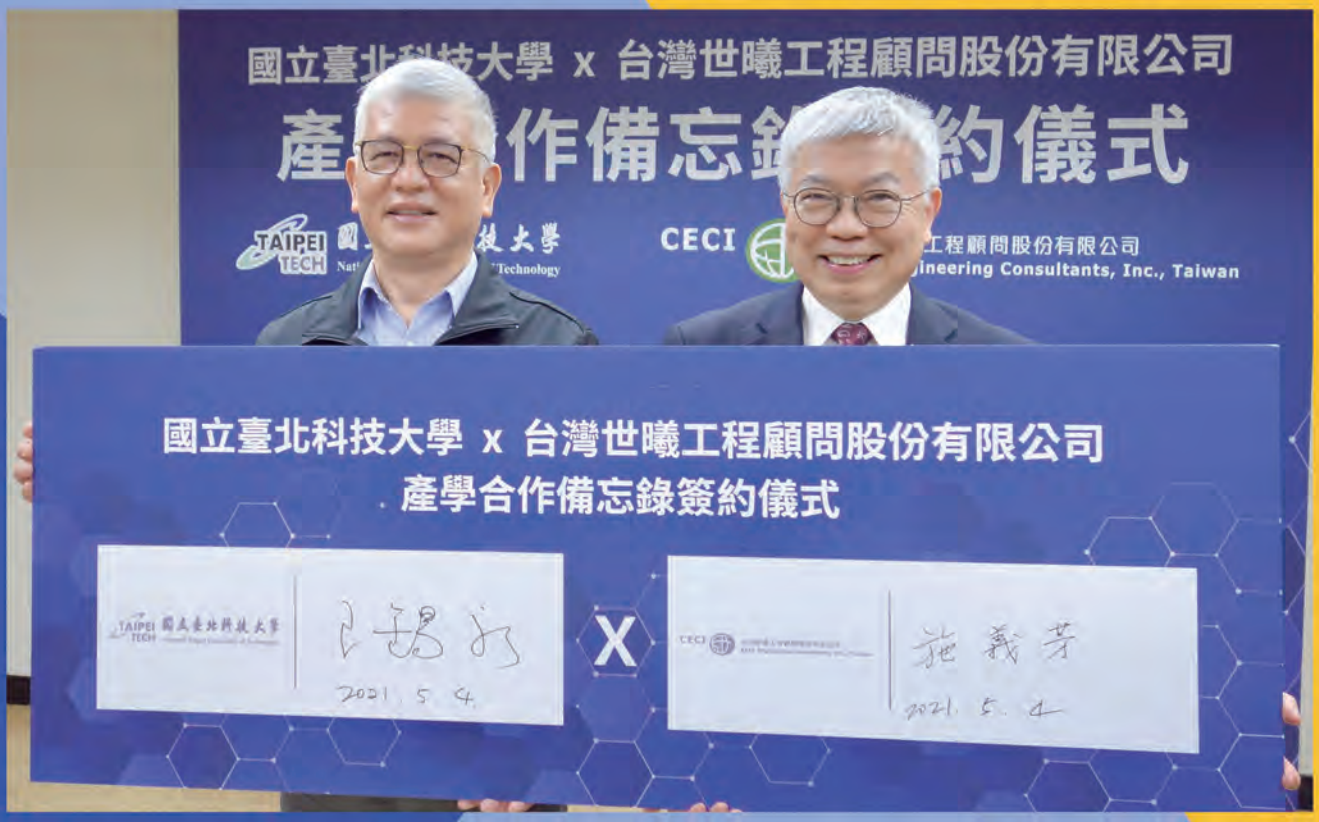
Team Midas Touch created a kitting and packing station utilizing pattern boards and a semi-automatic heat sealer to increase accuracy and safety for employees with disabilities. Kitting is the process of putting individual items into kits ready to be shipped, and the pattern board helps workers with disabilities identify shapes in the kitting process. The workstation also has a package-labeling machine that can be operated with one hand.

Hong Min-Qian, a Taipei Tech junior on the Midas Touch team, who has been familiar with workstation design since he was a high school student, said that the workstation design is both ergonomic and fool-proof. It was also a very valuable experience for him to go through the design process with team members using videoconferencing.

Taipei Tech President Wang Sea-Fue indicated that the students and professors of the Department of Industrial Engineering and Management have achieved great results in teaming with CSULA and have demonstrated fruitful and substantial international cooperation. Wang further indicated that the SourceAmerica Design Challenge promotes the UN sustainable development goals of Decent Work, Economic Growth, and No Poverty.



Taipei Tech students formed two teams with the students of CSULA and won the first and the second place respectively in the SourceAmerica Design Challenge



Shih Yi-Fang, Chairman of CECI, and Wang Sea-Fue, President of Taipei Tech, represented their respective sides in renewing and expanding on a partnership first signed in 2019

Taipei Tech Deepens Partnership with CECI to Collaborate on Sustainable and Smart Building

In May, Shih Yi-Fang, Chairman of CECI, and Wang Sea-Fue, President of Taipei Tech, represented their respective sides in renewing and expanding on a partnership first signed in 2019.

Taipei Tech's 2019 MOU with CECI, the leading engineering and construction company in Taiwan, collaborates on the research and development of offshore wind power technologies. In light of Taipei Tech's recent plan to establish an advanced technology institute focusing on research and development in energy, artificial intelligence, and semiconductors, the two parties took this opportunity to strengthen and expand on the partnership.

Wang indicated that Taipei Tech's close partnership with CECI will be beneficial in many aspects. With the internship and on-site training opportunities provided by CECI and the quality education provided by Taipei Tech, students will be able to acquire the practical know-how and skills that they need when entering the job market. "By working closely together," said Wang, "we create a new and significant opportunity to promote sustainable building and cross-disciplinary engineering."

Shih further noted that Taipei Tech's new advanced technology institute closely aligns with the development plan of CECI. The company's Building Information Modeling Center and Visual 3D Maintenance Management Platform are developed as a response to the demand of smart building. CECI also manages the construction of the award-winning smart public housing, the "Ruiguang Public Housing." Shih looks forward to cooperation with Taipei Tech.

CECI Engineering Consultants, Inc. is one of the largest engineering and construction company in Taiwan, with engineers specializing in mechanical engineering, electrical engineering, smart control system, and construction. CECI is also the first Taiwanese construction company to acquire the ISO 19650 series of international standards on information management of building information modeling (BIM).

Design Graduates Exhibit Projects Tackle Problems on COVID-19, Emergency Rescue, and Poverty

The 2021 graduates of the Department of Industrial Design exhibited their graduation projects from May 3rd to May 9th at the Taipei Tech Arts & Cultural Center. Taipei Tech President Wang Sea-Fue noted these projects cover various topics including ending poverty, ensuring health and well-being, promoting gender equality, encouraging sustainable consumption and production, and many others that can be associated with the sustainable development goals of the United Nations.

"These projects not only demonstrate what the students have learned during the past four years but also show their ambitions to utilize design to solve existing social problems," said Wang.

One of the projects, the Infinity Bubble, is designed to provide movable, temporary quarantine housing that can be easily deployed in areas severely hit by COVID-19. The outer layer of an Infinity Bubble uses negative pressure and HEPA filtration technology to keep the virus from spreading. Utilizing foldable material and the Miura folding technique, the size of an Infinity Bubble can also be greatly reduced for easy transport.

Li Jia-Yu, one of the designers of the Infinity Bubble, mentioned that "the most difficult part of the project was to find a form and a material suitable for easy and quick transport." Ellie Lei, another designer, noted that the Infinity Bubble would be really useful in areas where medical care capacity has capped.

The Infinity Bubble is one of nineteen Taipei Tech projects nominated for the Golden Pin Design Award this year. More than six thousand projects in twenty-five categories were submitted nationwide this year.

Another team of students designed Pad Case, a toolkit to make sanitary pads from agricultural waste. Pad Case is designed for women in Uganda, where sanitary products are not always available. Jasmine Wang, one of the Pad Case designers, mentioned that the product uses the most commonly-found fruits of Uganda, bananas and pineapples, as the source material for the disposable sanitary pads. "The leaves of pineapples and the trunk of banana trees are rich in fiber," said Wang, "and fiber can be easily turned into sanitary pads using the Pad Case toolkit."

LIGHTAID, a project by Nicholas Prawirani and Guo Xin-Yuan, makes it easier for bystanders to give CPR. According to Prawirani, statistics have shown that people typically feel tired and cannot continue to apply enough force for proper CPR after two minutes. LIGHTAID aims to solve this problem by utilizing a hydraulic press that amplifies the force applied by a rescuer. This conserves the rescuer's energy and helps facilitate more effective rescue.

Pad Case, a toolkit to make sanitary pads from agricultural waste

LIGHTAID, makes it easier for bystanders to give CPR

The Infinity Bubble is designed to provide movable, temporary quarantine housing that can be easily deployed in areas severely hit by COVID-19

Cultural Vocation Development Sophomores Hold Online Exhibition "The View of the Twenties"

Sophomores of the Department of Cultural Vocation Development organized an online exhibition named "The View of the Twenties" to showcase their projects. In the exhibition, the students reflect on what they value, their world view, and their outlook of life.

The exhibition is available to view until July 31st at *https://st1005318.wixsite.com/ntutcvd*

Mao Ziyuan, Wang Tianshin, Yeh Tingru, and Lai Chuanyu revisit the Malahtangia (hunting festival) of the Bunun indigenous tribe of Taiwan and incorporate symbols from this festival and the tribe in the design of modern tableware and light fixtures. The team made a vase based on the shape of a traditional millet mortar, a light fixture using the hexagonal weaving technique found in traditional Bunun back baskets, a set of ceramic plates that incorporate the Bununs' traditional diamond pattern, and a placemat based on the shape of traditional Bunun sieves. Through this project, the team hopes to introduce the Bunun culture to a wider audience.

For their project, Wang Yi-Jing, Chang Pei-Hsuan, Chen Chin-Hui, and Feng Pei-Rong made lamps inspired by a specific fishing method called "fire fishing" used by fishermen of the Huanggang Fishing Harbor of Jinshan in New Taipei City. Fishermen would light sulfur to attract the light-seeking scaled sardines. When hundreds of sardines would leap out of the water toward the fire, their scales would briefly reflect light onto the surface of the dark ocean. This fleeting moment is what the students intend to capture and transform in their work. They also use natural materials such as wood and hemp rope in their work to honor environmentally-friendly fishing.

Living in the convenience of the twenty-first century, Yu Hui-Wen, Shen Ting-Ni, and Su Ying-Wen realize that they are both blessed by modern technology and frustrated with the intrusions it brings. They put together an immersive art installation called the "Carefree Twenties" to reify these contradicting emotions. The installation is a tent-like structure with an opening on top and a stool at the center floor. Participants enter the structure and stand on the stool to peek out from the tent, which contains undulating, wavelike patterns that represents one's distracted mind. The team wants to remind participants to remember to view the world from a different perspective.

Yang Hsiu-Hui, Chair of the Department of Cultural Vocation Development, notes that she is impressed by the resilience these students demonstrate. "They needed to rethink the exhibition in an online format after the Level Three COVID-19 alert announcement," said Yang, "and the students put together this online exhibition through strong teamwork."

Taipei Tech Holds Exhibition to Highlight University Social Responsibility Projects

Taipei Tech held an on-campus university social responsibility (USR) exhibition from May 10 to May 12 to showcase the university's many USR projects and their results.

The USR projects of Taipei Tech are the collective effort of the USR Office and the faculty members and students of various departments. The projects focus on community regeneration and sustainable development; the many Taipei Tech USR teams bring their expertise to many local communities throughout Taiwan.

The architecture students proposed a plan that aims to make communities more friendly to the aging population. Based on the findings of their field research and survey, the plan includes community living, micro eldercare centers for senior citizens, care cafés, friendly stores, and pedestrian zones. The senior-friendly community that they envision effectively combines a people-oriented concept and the professional angle of architectural design and environmental psychology.

Another project presented in the exhibition is the water quality monitoring system deployed in the clam farming ponds in Kouhu Township, Yunlin. A team composed of faculty members and students from the departments of Chemical Engineering, Computer Science & Information Engineering, and Business Management installed industry-grade sensors that can monitor the pH scale, oxidation level, oxygen level, and temperature in the ponds. The data is sent to a server, and the clam farmers can use an app on their mobile phone to see the data. The project has increased the production rate of clam farming.

Members of the departments of Interaction Design and Computer Science & Information Engineering utilized virtual reality to engage tourists in Nangan Township, Matsu to stimulate local tourism. The team also recruited and trained volunteers from local elementary schools and middle schools to become familiar with VR and AR technologies. Through this training, local students can become more technologically savvy and learn more about local history.

Taipei Tech President Wang Sea-Fue noted that the Taipei Tech USR projects have resulted in many fruitful achievements over the years. USR teams have built a direct-to-consumer produce store in the indigenous community of Jianshi Township in Hsinchu, revitalized and preserved the heritage of the woodworking industry in Fengyuan District in Taichung, and held beach cleanup activities in Jinshan District of New Taipei City. Wang encouraged more faculty members and students to find their passion and join the university's USR effort.

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