Chun Chen Liu, Alumni of National Cheng Kung University, proves his ability to the world.

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‘Kneron’ is a new word that combines ‘knowledge’ and ‘neuron’ and symbolizes a promise of leading AI technology.

Founded by Chun Chen Liu, Alumni of the Department of Electric Engineering, National Cheng Kung University, Kneron was named a winner in the Artificial Intelligence Excellence Awards program of The Business Intelligence Group, which currently is a leading company in the field of Artificial Intelligence (AI). Initially, Kneron was not regarded as a viable company. However, Liu insisted on pursuing his idea and led Kneron to become among the top three AI chip companies due to its 3D AI technology and low-power consumption. As he faces challenges, Liu believes that opportunities come along with crises. In 2020, the world is suffering from COVID-19, and Kneron launched an AI presence machine. Indeed, Kneron’s staff put on masks and devote themselves to the world along with their professional colleagues.

“Kneron” in Chinese means being able to cope with isolation and assume responsibility. Liu saw himself to be a person who focuses on his job without being concerned about whether he will win a prize. His company is now a well-known company. Transforming himself from his role as an engineer who worked to solve technical problems to a CEO who assumed decision making responsibilities, Liu points out that now his new challenge involves more complicated dimensions and requires more rational considerations.

You have to keep going to widen the distance when the others are taking a break.” Entrepreneurship means numerous busy days and sleepless nights. In order to strive for opportunities, Liu’s life is filled with business travel. Sometimes, he even forgets which country he is in.
Business development is also like an adventure movie, where Liu is a character in every episode which include betrayal, bankruptcy, and conflicts of interest. One Thanksgiving, after he came back from a business trip, Liu found that most of his co-workers had left the company. Funding gaps, abandonment and company crises have all been blows to Liu and have caused insomnia and other health problems.

Liu mentions that during the process of founding the company, some partners left, but new partners joined in. Luckily, classmates and colleagues from his former company still work with him. Now, the core members of Kneron are his friends from NCKU. Liu recalls that they played volleyball together, shared a social life, and played hard the day before mid-term exams. To him, those things still feel like they happened yesterday!

Taking cross-department courses, holding house-warming parties, and sitting-in to protest MP3 Event while attending university, Liu regards NCKU as a university of celebrating freedom and nurturing the development of professionals in every fields. He encourages students at NCKU to meet new friends, to try new things, to escape self-limitations, and finally to enhance their thought processes.

Due to his flexible thinking and courage, Liu can bravely face any challenge. When he was a sophomore, Liu almost failed a required course, “Computer Organization,” because he didn’t apply C programming language on an assignment. In 2020, Liu returned to NCKU as an instructor and opened a course, “AI-on-Chip for Machine Learning and Inference,” with Prof. Chung-Ho Chen, who was his “Computer Organization” teacher when he was a sophomore. In order to prepare the teaching materials for this course, Liu edited the textbook on the plane during business trips and ultimately was ready for the school-opening date.

As Liu’s teacher and colleague, Prof. Chung-Ho Chen, a professor of Department in the Electric Engineering at NCKU, points out that now the “Computer Organization” course allows students to finish assignments using other programming languages. The original intention of inviting Liu to lecture in this course was to develop AI chips for professionals in Taiwan. Collaborating with students to co-teach this course is “a thing which I never imagined when I was young; however, it is a wonderful life experience,” said Prof. Chen.
Liu believes that “being practical and down-to-earth” is a core value of any business.

Kneron has become one of several companies launching AI chips. By maintaining the practical spirit of NCKU’s engineering culture, such as working overtime and during typhoons, or working together with partners, Liu reflects a genuine team spirit, which was cultivated during the time he studied in NCKU.

“I found that people in the United States are active and expressive!” Liu wants to share his beliefs with his juniors at NCKU, “Maintaining an innovative mindset and being down-to-earth are the timeless core values of one’s life.”
German exchange students share their experiences with living in Taiwan during the pandemic

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May 2020 marks the 1-year anniversary of the Technische Universität Darmstadt (TUDa) Asia Office at National Cheng Kung University (NCKU). TUDa and NCKU have had a cooperative relationship for 30 years. Together, the two universities have put effort into joint research programs and have built student exchange programs. This semester, TUDa chose to send over five students to NCKU as part of an exchange program. On May 8th during the students’ poster presentations, the exchange students from TUDa shared some of their experiences and thoughts with us.

In the face of the COVID-19 pandemic, the TUDa students find themselves in a situation that was not anticipated in their exchange plans.

“When I was leaving for Taiwan, my family was worried about me coming to Asia. But now, two months later, I’m more worried about them in Europe than they are about me.” Mr. Marc Henneberger, an exchange student to NCKU’s Mechanical Engineering Department, commented. In February when exchange students were set to arrive in Taiwan, the world was just beginning to recognize the severity of the COVID outbreak. Asia, with China being the epicenter of the disease, suffered the earliest wave of COVID-19 before its rapid spread began in Europe and America.

Mr. Caleb Mehari was originally heading for Shanghai, China, for an exchange program in architecture. However, due to the virus, TUDa had to make adjustments to ensure student safety. Mr. Mehari was redirected to NCKU in Tainan, Taiwan. “I didn’t know what to expect,” he said regarding the new arrangement.

Despite his initial unfamiliarity with Taiwan and uncertainty about Taiwan’s health situation, Mr. Mehari observed
upon arrival that life continued as normal in Taiwan. He mentioned that schools in Germany at the time had either closed or put their classes online for remote teaching. “But here in Taiwan, schools are still open. Students can go to class, and people can still go out to eat.” He talked about how Taiwan did not go on lockdown. At the time of the interview on May 8th, Taiwan had reported no new local cases for 25 consecutive days. “Life continues here.”

Ms. Elvira Khamenok remarked when asked about life in Taiwan during the pandemic that Taiwanese people appear to be dealing with the pandemic in a calm, organized way. As was the case with Mr. Henneberger, her expertise is in the field of mechanical engineering. “The public is not panicking over the pandemic, and people have remained friendly even during this critical time,” she said. “People did not treat me differently because I’m a foreigner.”

Mr. Henneberger shared a story where he received help from passers-by when he was purchasing face masks. The mask-rationing plan was implemented on February 6th, after which all mask purchases had to be made with a National Health Insurance (NHI) card. For foreigners without an NHI card, a Resident Certificate is required during purchase. Mr. Henneberger realized he did not have the necessary credentials while waiting in line for the masks and decided to leave the pharmacy, but the staff and other passers-by asked him to stay and proceeded to call up the school’s personnel to help him access the required information. He was touched by the friendliness and helpfulness shown to him by the Taiwanese people.

Collectively, the TUDa exchange students agreed that life in Taiwan is convenient. It does not take too much effort to get around the city with different transportation methods, and it is easy to find food, especially near the NCKU campus. In spite of the pandemic, their exchange study period in Taiwan is a positive experience.
Yen Ting Cho Donates 200 Face Masks and Enriches Fashion at NCKU

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Founded by Yen-Ting Cho, Associate Professor of the Institute of the Creative Industries Design, NCKU, his eponymous brand “Yen-Ting Cho” has launched a series of three face mask: “Bloomsbury Square,” “Dreamscape,” and “White Palace.” The first 200 face masks will be donated to the administrative units at NCKU. On May 13, the official Yen-Ting Cho site will have a flash sale. Dr. Cho looks forward to transmitting positive emotion and creating new fashionable styles during the Covid-19 pandemic.

“Only by training oneself to create an unprecedented work can one transmit courage to others,” says Dr. Cho. With persistence and courage, Dr. Cho believes that his creations become perfect through experiencing risks and crises. COVID-19 has caused global economic effects, and the fashion industry is no exception. By launching the series of face masks, Dr. Cho also expects that “people will be empowered by his works.”

Dr. Huey-Jen Jenny Su, President of NCKU, points out that as diverse, dynamic university, NCKU shows the forward-looking thinking that helps solve problems through the use of professional technology and cultivating the power of the arts. The series of three face masks is an embodiment of fashion, style, and practicality. The patterns on the masks were designed using “MovISee,” a digital design software program developed by Dr. Cho. Each face mask can be viewed stereoscopically after putting it on. For example, the Bloomsbury Square series has different colors on both sides and can be seen as either cool or fashionable. The patterns in the Dreamscape series are like currents intersected on the mask. With vertical lines, the White Palace will have the effect of facial retouching.
During the COVID-19 pandemic, NCKU solves problems with professional technology and cultivates the power of arts and culture.

Since summer is coming soon, all of the face masks are made of a breathable silk-like fabric, so those who wear one all day long won’t feel hot and uncomfortable. In the design process, the team designed more than 20 patterns and finally decided on these three different mask styles. The design team, “Tainan Digital Textile Printing,” founded by NCKU alumni, also worked overtime to finish printing within one week.

The design team checked every detail against rigorous standards in order to ensure the quality of the masks. Dr. Cho points out that though the cost of the silk-like fabric is higher, it is more comfortable than any other fabric alternatives. The brightness, contrast, and saturation of the fabric color make the patterns on the masks quite vivid.

Covering surgical masks with a mask cover can help avoid staining the surgical masks and decrease the frequency at which they have to be discarded. Dr. Cho mentioned that if there is no close contact, mask covers can be used on every occasion and can be an alternative in response to the shortage of face masks.
Using his program “MovISee,” Dr. Cho has created a series of stylish fashion accessories. In addition, his works combine NCKU’s Banyan Garden, the university’s classical buildings, and the blue sky of southern Taiwan. Through industry-academia cooperation and collaboration with local industries, his brand “Yen-Ting Cho” is widely admired at international trade fairs, and his products are displayed in museums and in a select shop, Nasher Sculpture Center. In addition, due to having clients all over the world, he also gets many opportunities to work with international brands such as Bulthaup (Germany), SFMOMA (United States), the Museum of Arts and Design (United States), Psyché (France) and Pierre (Monaco).

♦ If you want to learn more, please check out the following website: https://yentingcho.com/face-mask-cover

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NCKU and Southeast Asia countries hubs fight COVID-19 with technology innovations

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COVID-19 pandemic has hit the whole globe late last year. People are faced with severe challenges in their health, life and societies. This unprecedented moment is regarded as an ordeal for all governments, and a spur for most countries to tremendously dedicate to advance related biotechnology and medical epidemic preventions. It encourages utilization and market growth of medical technology and devices such as PPE (personal protective equipment), rapid testing kits, diagnosis & monitoring devices, telemedicine and preventive healthcare. National Cheng Kung University (NCKU), one of healthcare frontlines and top universities in Southern Taiwan, fight against the new coronavirus with Taiwan government and the world by integrating resources shortly and harnessing its capacity of science research and clinical experiences.

“Medical technology is the result of combining clinical experiences, technology development, public policy and global trends.” said Dr. Ming-Long Yeh, director of Medical Device Innovation Center (MDIC), NCKU. MDIC, an engine for promoting medical device innovation of Asia Pacific, has long dedicated to R&D, international partnerships and field testing of medical devices. On 28 May, MDIC organized “NCKU x UM x UMP x MU International Seminar: Innovations for Fighting COVID-19,” an online meeting with its Southeast Asia countries research partners for exchanging different perspectives and ideas of innovative medical devices and new technology applications against COVID-19.

Dr. Fong-Chin Su, Executive Vice President of NCKU gave a long-term insight into anti-coronavirus technologies:
“The epidemic has lasted more than four months, which forced the whole world to reconceive the roles and positions of technology in our lives.” Responding to the society’s needs by taking advantages of its research and technology capabilities, NCKU and NCKU hospital soon adopted smart technologies in epidemic control and prevention while the Taiwan government announced Taiwan’s first virus case in January. That took effects to eliminate required human resources, diagnosis difficulties and infection risk, winning the only honor from Taiwan in COVID-19 Global Hackathon. NCKU also spanned medicine, architecture, and engineering to create a prototype of quarantine hospital for COVID-19 treatments, sharing its design manual available for the whole world to download.

This online meeting formed a discussion forum participated by NCKU and its overseas hub partner universities — University of Malaya(UM), University of Medicine and Pharmacy at Ho Chi Minh city(UMP), and Mahidol University(MU). The forum provided insights into the capabilities against COVID-19 and technology development in Taiwan, Malaysia, Vietnam and Thailand. Grant and Innovation Center(GIC), UMP promoted frugal innovations to their medical students and proposed making simplified ventilators by using disposable masks and 3D printed valves. MU public health scholar introduced how Thailand government, hospitals, research institutions and citizens take strategic actions against coronavirus. Nanotechnology and Catalysis Research expert from University of Malaya shared how modified nano-coating technology can prevent the virus.

As for NCKU, Dr. Che-Wei Lin and his team from department of biomedical engineering is excellent in analyzing biomedical signals using Artificial Intelligence. They developed technology to detect respiratory infectious disease using E-nose and artificial intelligence algorithms. They also developed contactless vital sign sensor using mmWave technology, which is used to monitor infection disease patients and require less healthcare human resource.

In Department of Emergency Medicine of NCKU Hospital, medical staff in charge of first aid turned their challenges into innovative and useful ideas. Dr. Pin-Hui Fang, an attending physician, develop the concept of “Protection Tent,” protecting doctors from getting infected during intubation after COVID-19 patients suffer respiratory failure. It could be also used in ambulance to prevent doctors from being exposed to aerosols. Dr. Chia-Lung Kao, another attending physician, develop “Novel Full Face Nebulizer Mask” to prevent aerosol spread while inhalation therapy and decrease the infectious risk for doctors.

On the other hand, MDIC focuses on developing smart healthcare and innovative medical devices. Dr. Chen Hsun
Weng talked about the necessity to provide immunization service now and for the future. He introduced “Infants Tiny Box,” as a protection from coronavirus using the PVC-U pipe and a air filter. He also mentioned the difficulty of distinguishing Dengue fever and COVID-19 because they share clinical and laboratory features. As a result, he developed a 3D printing filter for plasma separation from whole blood, which can detect the COVID-19, Dengue, and EV71 for resource-poor countries. Dr. Yu-Sheng Lin and Dr. Chih-Chun Lin shared how the virus forced people to stay home longer and increase the demands for telemedicine and telecare. They proposed “Virtual Motor Assessment” and “Smart Ergometer System for Health Promotion” for tele-rehabilitation during COVID-19.

“COVID-19 pandemic is escalating the innovation of medical devices and technology, closely combine clinical views, technologies and experiences of the whole globe.” said Dr. Chih-Hao Lin, director of Department of Emergency Medicine, NCKU Hospital. The diversified topics and perspectives shared in this online-meeting could create new collaboration possibilities and integrated into more advanced technologies and applications in the near future.

As most countries are embracing the hope of growing progress in fighting COVID-19, the four participating countries are recently either coping with strengthening epidemic prevention actions or relieving social restriction policies. In Malaysia, 7604 confirmed cases and 115 death (death rate 1.51%) are reported. The lockdown policies will remain until June. In Thailand, 3054 confirmed cases and 57 death (death rate 1.81%) are reported and the government is looking forward to relaxing restrictions for business activities. In Taiwan and Vietnam, 0 confirmed cases are reported for over one month and the authorities intend to ease restriction rules gradually.

“International partners are seeking ways to collaborate tightly with each others than ever, enhancing the ability to tackle the unpredictable future changes.” said Dr. Hsiao-Wen Wang, Vice President for International Affairs of NCKU. NCKU remained intensive communications with its international partners during COVID-19. Specialized website (http://covid19.ncku.edu.tw) was established to share epidemic prevention experiences and perspectives. Virtual conferences are held to discuss post-pandemic education and drug R&D with over 150 university presidents, scholars, experts, and medical professionals from over 10 countries. NCKU also fulfilled its social responsibility by launching a talent cultivation program for a resilient future.

The purpose of this online meeting hopes to introduce Taiwan's medical and technology advantages to Southeast Asia countries leaders. Meanwhile, NCKU expect to continue collaborations on medical device innovations with its Southeast Asia countries partners, empowering resilience to global issues and improving human well-being.