

KTEO NEWSLETTER

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IMPACT STORY

PolyU, as Cradle of Entrepreneurs, Witnessed Birth of a Unicorn



PolyU has been visionary in education and scientific research, being committed to cultivating changemakers for a better world. As early as 2011, PolyU took the lead in promoting innovation and entrepreneurship on campus, and has nurtured more than 1,000 entrepreneurs and nearly 400 startups so far, including Hai Robotics Co., Ltd. (Hai Robotics), a unicorn. Hai Robotics, founded in 2016 by Richie CHEN and FANG Bing, graduates of the Department of Electronic and Information Engineering of PolyU, is a startup that provides world-leading autonomous case-handling robotic systems.

PolyU's Diversified Innovation and Entrepreneurship Education Plants Seedlings of Entrepreneurship

With forward-looking insights, Professor LU Chao, the undergraduate degree programme supervisor of Richie and Bing, challenged them with postgraduate-level research projects, making the two partners ever since. Their continued development of the research project work after graduation together with the funding support of RMB200,000 provided by PolyU through the first cross-border entrepreneurship seed fund, entrepreneurship education and laboratory fostered the foundation of their first startup in 2014. Although their first product, the optical communication control module, has secured the orders from the world's top laboratories such as NASA, Huawei, Bell, etc., the market size for this product that can only be applied in a specific sector was pretty small, making them unable to achieve their goals to "Do Well Do Good" and solve some major social problems. They later envisioned a high demand for robots in the future due to an aging society, and decided to devote themselves to robotics R&D by leveraging their experience gained from the robotics competition at PolyU.

Serial Entrepreneurship and Devotion to Robotics R&D

In 2016, they found that warehouse robotics were of significant social value. So they visited over 30 warehouses in person to thoroughly understand the pain points of the warehouse operation, and conceived the idea of minimising warehouse modification to achieve the "Case-to-Person" solution, greatly reducing the threshold for the automation of warehouses. Although the success of their first startup boosted their confidence, they were short of capital for the significant R&D investment in robotics with long payback time. PolyU granted an entrepreneurship fund of HK700,000 to them again, making them more determined to set foot on entrepreneurial journey again.



The World's First Autonomous Case-handling Robot Creates A "Blue Ocean" Market



After over four years of R&D, Hai Robotics launched the world's first autonomous case-handling robot, HAIPICK, as well as the ancillary HAIQ intelligent management platform, HAIPORT multifunctional workstation and intelligent charging station. By using the HAIPICK system, customers can increase storage density by 80% to 130%, and work efficiency of workers by three to four times. Customers can even have their warehouses automated within a week, and this system boasts flexible deployment, quick response to changes in storage requirements, as well as ease of movement, expansion and upgrading. It is well received by the market. Since the inception of Hai Robotics, the number of projects implemented or being implemented has exceeded 200, and over 1,500 robots have been sold to customers in various sectors, which include third-party logistics (3PL), footwear, medical, 3C electronics, power and retail. The company's customers include SF DHL,

Philips, BEST Supply Chain, ANTA Logistics, Xin Hee, State Grid, etc., spanning over 20 countries including China, Japan, South Korea, Australia, Europe and the United States. Hai Robotics has also set up wholly-owned subsidiaries in the United States, Japan, Singapore and the Netherlands to expand its global network.

"Hai Robotics is committed to providing efficient, intelligent, flexible and customised warehousing automation solutions through advanced robotic technology and AI algorithms, creating value to every factory and logistics warehouse," said Richie. Hai Robotics focuses on R&D and continuous innovation, and has accumulated over 400 intellectual property rights to maintain its leading position. Nowadays, the advanced 3D visual recognition technology is applied in the latest HAI PICK system, which achieves the functions of double-deep shelf picking and carton picking and handling, and is more adaptable to logistics warehouse and factory automation scenarios.

Taking on Challenges with Innovative Capabilities

So far, Hai Robotics has completed seven rounds of financing with top investment institutions, such as Legend Star, Source Code Capital, 5Y Capital and Sequoia Capital. After its latest round of financing, the company's valuation exceeded US\$1 billion based on, earning it the "unicorn" status. In May this year, "Fortune China" released a list of 40 business elites aged below 40 in 2021 to recognise young business leaders who continue to create value, and Richie is on the list.



Looking back on their entrepreneurial journey, Richie said, "PolyU planted the seedlings of entrepreneurship and irrigated our growth to allow us to survive the initial difficult years. The company is still in its growth phase. We are grateful that PolyU continues to provide help in developing our talents and expanding our markets." "PolyU's entrepreneurship education has cultivated our ability to innovate and cope with challenges, and it provided financial assistance when we were short of money. We still face a number of challenges. For example, the number of employees has increased from 300 to over 1,000 in a year, causing management pressure, but we are confident that we will continue to solve new problems," Bing said.

First Unicorn Startup Nurtured in PolyU's Entrepreneurial Ecosystem

It is PolyU's honour that Hai Robotics is the first "unicorn" startup nurtured in its entrepreneurial ecosystem. In recent years, PolyU has continued to encourage innovation from the source, promote undergraduate scientific research, set up a problem-oriented interdisciplinary scientific research platform, encourage school-enterprise partnership to support scientific research and entrepreneurship, carry out pre-incubation for entrepreneurship at the campus stage, increase resources to help commercialise laboratory technology, and set up venture capital funds in the midstream and downstream to promote the commercialisation of scientific research results. It is believed that more "unicorns" will emerge in PolyU's innovation ecosystem in the near future.

QUICK UPDATES

PolyU Signs MoU with Four Strategic Partners to Advance GBA Entrepreneurship and Nurture I&T Talent

In August, PolyU and Hong Kong Science and Technology Parks Corporation (HKSTP) signed a strategic memorandum of understanding (MoU) to form a joint GBA-focused entrepreneurship programme, which aims to nurture young R&D talent into Hong Kong's next generation of leading tech entrepreneurs and innovators. More details can be found [here](#).



In September, PolyU signed MoU with three more strategic partners, namely Everbright Limited, StartupHK Fund and Hai Robotics to further propel the "GBA PolyVentures 2025" blueprint laid down by the University to leverage PolyU's experience in innovation and entrepreneurship education to provide the necessary support for nurturing deep tech ventures and accelerating their growth. The collaboration also aims to translate research excellence into societal impact to contribute to the development of innovation and technology in the GBA. The goal of "GBA PolyVentures 2025" is to distil more than 300 seed stage innovation startups into at least 20 deep tech ventures each year and to nurture 25 impactful scale-ups in the GBA in the next few years through collaboration with strategic partners and various supporting initiatives. More details can be found [here](#).



Transfer of Smart Tree Management System to Government Helps Enhance Urban Resilience



Following the closure of the "Jockey Club Smart City Tree Management Project" led by Professor Charles WONG, Department of Land Surveying and Geo-informatics, the Smart Tree Management System for Urban Tree Management was officially transferred to the Tree Management Office (TMO) of the Development Bureau of the HKSAR Government. The three-year pilot project was funded by The Hong Kong Jockey Club Charities Trust with a grant of HK\$32.8 million and was supported by various government departments. Other collaborators include The University of Hong Kong, The Hong Kong University of Science and Technology and Friends of the Earth (HK). Designed and structured with AI, smart sensing technology and GIS, the Smart Tree Monitoring System is an innovative technology for smart cities which monitors tree tilt and detects tree instability. Smart sensors have been installed on 8,000 urban trees to prevent hazards arising from falling trees, allowing timely and appropriate mitigation measures to be taken. The transfer of the system to TMO will further enhance urban resilience and the living environment for the community in the long run. More information can be found [here](#).

CareCoatex™ Reinforces Protection of PolyU Campus against COVID-19

In line with the University's precautionary measures against COVID-19, the Campus Facilities Management (CFM) Office of PolyU has been diligent in enhancing the hygienic conditions throughout the campus. To prepare for the new academic semester where surged face-to-face interactions were expected, CFM applied CareCoatex™ to all classrooms and lecture halls at PolyU. With lasting disinfectant effect of up to six months, the biomaterial-based anti-bacterial and anti-viral spray, CareCoatex™, was developed by Grand Rise Technology Limited, a PolyU-supported startup co-founded by Prof. Pauline LI Pei from the Department of Applied Biology and Chemical Technology. Now, all students and staff can rest assured that they are learning and working in a safe and healthy environment.



ENTREPRENEURSHIP AWARDS

Entrepreneurs often participate in competitive events to widen their exposure and networks, attract investments, gain recognition and earn resources for their entrepreneurial journeys. Some PolyU-nurtured startups and student teams have performed well in recent competitions. Congratulations to all award winners below:



Chun Wo Innovation Student Awards - Silver Award & The Best Business Potential Award

Evergreen Wearable Technology Limited

- Awardee of PolyU Micro Fund Scheme 2020

Startup Express Pitching Contest 2021 – Winner

CLAIRE Clinical AI Research Limited

- Awardee of PolyU Micro Fund Scheme 2020

MIT HealthHACK 2021 - Future of Aging - Winner (Caregiver Support)

CLAIRE Clinical AI Research Limited

- Awardee of PolyU Micro Fund Scheme 2020

Annual Student Open Educational Resources (ORE) Contest - First Prize

Student Project "Computing Learning Channel"

- Awardee of PolyU Student Entrepreneurial Proof-of-Concept (POC) Funding Scheme 2020-21
- Team members: ZHANG Caiqi, LI Jinlin, DING Yukuan, WANG Hewei



PolyU Hardware Bootcamp Cultivates Students' Entrepreneurial Spirit and Mindsets



The three-day bootcamp at MIT Hong Kong Innovation Node in August was an intensive and fun weekend where participants from various disciplines gathered and came up with ideas and prototypes under the guidance of industry mentors. Over 160 participants joined the event and 56 teams were formed. A total of 15 shortlisted teams together with five teams shortlisted from previous PolyU Makerthon would go through the MVP and Market Validation Training in September before pitching for HK\$600,000 funding and two-year incubation support (under PolyU Maker Fund Programme).

GBA Startup Postdoc Programme Nurtures Technopreneurs

As a signature programme in the Greater Bay Area to nurture PhD entrepreneurs, the GBA Startup Postdoc Programme piloted in 2019 provides a dual career opportunity for talented PhD graduates to pursue translational research while venturing commercialisation, under academic and industry supervisors' dual supervision. The 24-month programme is the first of its kind in Asia to nurture future technopreneurs for the leap.

For the coming cohort, 10 GBA Startup Postdocs candidates were recommended by the judging panel to admit to the Programme after the Final Assessment in mid-August. The judging panel included Dr Daniel YIP (Member of PolyU Council), Mrs Sophia CHAN (Member of Knowledge Transfer Committee, PolyU), Mr Ray KUNG (HKSTP) and Mr Kelvin WONG (KTEO, PolyU).



PolyVentures Seminar Unlocks Investment Value of Academic-led Startups



PolyU provides abundant learning opportunities for entrepreneurs and would-be entrepreneurs to hone their mindsets, skills and knowledge, preparing them for their entrepreneurial journeys.

In the second sharing titled "How Valuable is a Professor for Investors?" in August, Dr Jason SUN, Director of Hong Kong X Technology, was invited to share how the investors' view research-based startups with valuation myths and advice on communication with investors. Another guest speaker, Ms Yan YEUNG, Partner of PwC Hong Kong, focused on advising shareholding structure and its impacts on team motivation and future fundraising.

