

COMP @ NEWS

Spring 2022

Congratulations to our final year student, **Alex Zhang Caiqi**, (BSc (Hons) in Computing, Year 4), who has been awarded the **"Outstanding Student Award of Faculty"** and **"Outstanding Student Award of Department"** for his excellent academic performance, active involvement in extracurricular activities and exemplary personal qualities. The Outstanding Students Award Scheme is one of the most prestigious award schemes at PolyU which is set up to recognise high achievers.

PolyU Outstanding Students Award Scheme 2021



Alex is an all-round student who has exceptional accomplishments in both academic and non-academic pursuits. He has received the Dean's Honours List in 3 consecutive years and numerous competitive scholarships throughout his study at PolyU COMP. Alex also got the opportunities to further explore overseas, for example, conducting AI research at UCLA and Cambridge for the most cutting-edge international scientific research projects. Upon completing several research projects at PolyU and overseas, he gradually finds his genuine interest in Artificial Intelligence.

"PolyU is like a fertile ground where anyone can flourish with their own efforts!"



"I have gained knowledge and insights at COMP, making me feel confident to embrace the digital age...PolyU is a place that can provide me with professional knowledge, student clubs, volunteer service, exchange, internship, and research," Alex shared.

Apart from study and research, Alex enthusiastically participated in extracurricular activities such as competitions and volunteer services.

Being the top student in COMP, Caiqi was the awardee of the Institution of Engineering and Technology Prize 2020, in which only a few students get the glory every year. Currently, he is the third debater in the university's mandarin debate team and the PolyU student ambassador. He also spares no effort to support community services. In 2017 and 2019, he gave voluntary teaching services in the rural area of China, Cambodia, and Vietnam and participated in local voluntary work that helped the elderly. His excellent personal qualities have proved that he truly deserves the awards. "PolyU gives me the ability to make a difference and take my social responsibility," He wishes to become an AI engineer in the future. His ultimate goal is to develop AI assistants that can enter millions of homes in the future and have a far-reaching impact in many areas such as education and the medical field. "During the service trips, I have witnessed the poverty and inequality of underdeveloped areas. Therefore, I aspire to use technology to help improve people's lives. Studying at PolyU is an excellent starting point for my career, and I hope to make a more significant impact on society in the future!" said Alex. To move toward his dream, Alex has already taken the first step by building a virtual startup that supports the teaching activities at PolyU. Wishing and dreaming are the beginning of all human endeavours, and Alex is undoubtedly a role model.



AWARDS & ACHIEVEMENTS



Prof. Cao Jiannong has been Named the Fellow of China Computer Federation

Prof. Cao Jiannong, Otto Poon Charitable Foundation Professor in Data Science and Chair Professor of Distributed and Mobile Computing, has recently been named the Fellow of China Computer Federation (CCF), the leading organisation on computing technology and applications in China. With the outstanding achievements and contributions in distributed computing, wireless network and mobile computing and big data analysis, Prof. Cao was elected as one of the nine CCF Fellows this year.



CCF Fellow Program was initiated in 2008 to recognise those members who have made outstanding achievements in the field of computer science or made exceptional contributions to CCF and have membership for more than five consecutive years. CCF Fellow is the highest level in the membership of CCF, and currently, there are 150 CCF fellows, accounting for 0.32% of professional members.

Prof. Guo Song Received the Best Paper Award



Prof. Guo Song, our Professor, received the 2020 Best Paper Award from IEEE Transactions on Computers by the IEEE Computer Society Publications Board with his paper titled "A Deep Reinforcement Learning Based Offloading Game in Edge Computing".

Paper Abstract

Edge computing is a new paradigm to provide strong computing capability at the edge of pervasive radio access networks close to users. A critical research challenge of edge computing is to design an efficient offloading strategy to decide which tasks can be offloaded to edge servers with limited resources. Although many research efforts attempt to address this challenge, they need centralized control, which is not practical because users are rational individuals with interests to maximize their benefits. In this article, the design of a decentralized algorithm for computation offloading is studied, so that users can independently choose their offloading decisions. Game theory has been applied in algorithm design. Different from existing work, the challenge that users may refuse to expose their information about network bandwidth and preference is addressed.

Faculty of Engineering Research Grant Achievement Award 2020

COMP Professors, **Prof. Guo Song**, **Prof. Li Wenjie** and **Prof. Xiao Bin**, recently received the Faculty of Engineering (FENG) Research Grant Achievement Award for 2020 in recognition of their great efforts and contributions in securing external competitive research grants. All of them have led and participated in a number of multidisciplinary research projects in recent years.



Prof. Guo Song



Prof. Maggie Li



Prof. Xiao Bin

The Faculty Research Committee has set up FENG Research Grant Achievement Award since 2003 to recognise the outstanding performance of FENG academic staff members in securing external competitive research grants. To be qualified, a staff member must successfully secure three external competitive research grants in 36 months or four external competitive research grants in 60 months, as Principal Investigator/ co-Principal Investigator.

- » Prof. Guo's research interests are mainly in the areas of Big Data, Edge AI, Mobile Computing, and Distributed Systems.
- » Prof. Li focuses on the research areas of Natural Language Processing, Text Mining, Social Media Analysis, Information Retrieval, Extraction and Summarization.
- » Prof. Xiao conducts research on AI and Network Security, Data Privacy, Learning Model Security and Blockchain Systems development.

Community Outreach Gold Award 2021 at eLearning Forum Asia

We are proud to announce that **Dr Peter Ng**, our Teaching Fellow, received the Community Outreach Gold Award 2021 at the eLearning Forum Asia (eLFA) with a VR application for dementia.

In this VR application, the reminiscence therapy approach has been developed using HTC Vive and Leap Motion, and the scene is based on an apartment in Hong Kong public housing in the 1970s. It helps the occupational therapy students study the need for dementia and detect mild dementia in an early stage.



Peter shared his philosophy of building this project, "Educators in Computing should always keep abreast of the latest trends and innovations. They serve as the gateway through which students are inspired and exposed to new and cutting-edge technologies...We rethink the impact of games and unlock the innovation of our students."

The eLFA awards formally recognise and reward exemplary practices among the eLearning communities to further enhance sharing of experiences in using information technology in teaching and learning.

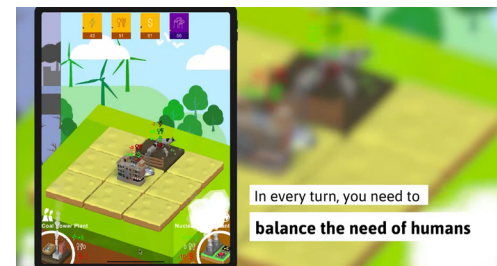
Global Game Jam in Hong Kong 2022

The Global Game Jam (GGJ) 2022 was held virtually from 20 to 30 January, attracting over 26,000 jammers from 680 jam sites in 10 countries. GGJ allows jammers to get together, form teams with other local participants and develop games in the time span of 240 hours. This year, the GGJ Hong Kong site was co-organised by Cyberport and COMP, which was the 11th biggest among all jam sites worldwide, with 241 jammers from students to professional game designers who created 59 games remotely. The best teams in nine different categories were awarded. Amongst them, two COMP teams received the Best Engagement Game and Best AR Game respectively.

Best Engagement Game - Human Nature

Under the global theme of the word "Duality", the teams were required to complete the full game development cycle from ideation to testing, including programming, art, game, sound and user interface design and testing. **Mr Wu Chun-Hung**, (BSc (Hons) in Computing, Year 4) teamed up with **Mr Zachary Sin** (COMP PhD Student) and two staff of COMP to design and develop the game "Human Nature" within a week. They finally won the Best Engagement Game award.

Responding to the continued environmental crisis, "Human Nature" is themed on the duality of human and nature. To take charge of the universal development of humanity, players need to reduce pollution and balance the needs of humans and that of the planet. They could learn about the environmental and economic impacts and how to avoid global disasters when acquiring different resources.



Being a member of a team composed of students and professionals, Chun Hung has explored actual practices of game development. "What I learned from the competition was mostly from my seniors. I discovered the difference between fresh undergraduates and professionals by observing their works," he said, "The most obvious difference is the insistence on quality. They always have higher standards in every way, but the truth is that I am limited by the student standard."

"I discovered the difference between fresh undergraduates and professionals by observing their works."

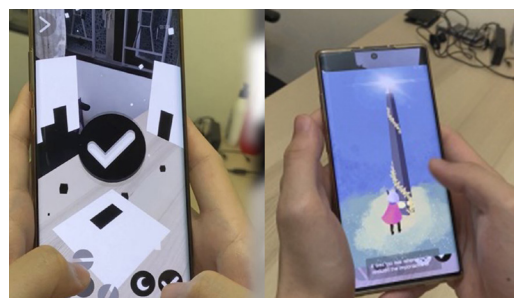
Best AR Game - Mono



Three COMP undergraduates, including **Mr Benedict Nicholas**, **Mr Coa Michael** and **Mr Hadi Nelsen** (All from BSc (Hons) in Computing, Year 3), together with a schoolmate from the Department of Electronic and Information Engineering, won the Best AR Game award with their controllable AR game "Mono".

This game runs through a fairy tale full of philosophical sayings in a simple and smooth art style. In the game, white squares in bright light are separated from opposite black shadows. Players need to build blocks in a way that matches the given puzzle projection. The team used Unity along with the Vuforia and Dotween package libraries to make the game compatible with AR.

"The GGJ was a good experience to exercise our creativity, because in a short period of time, a lot of ideas were made and also eliminated from the final product," Nelsen shared. "With that in mind, compromising skill is my main takeaway from this project because we had to overcome a lot of disagreement."



Time management was one of the team's biggest challenges that they spent 3 to 4 days on brainstorming, two days on scripting and testing and one day on video making. "We learnt that a lot of testing has to be done and we spent so much time on the brainstorming part," Michael said. Nelsen also mentioned, "I learnt that time management within the team is important... anything can be achieved as long as a team works together towards the goal."

"Anything can be achieved as long as a team works together towards the goal."

GGJ is the world's largest game jam event taking place around the globe, typically at physical locations, providing a creative platform for talented individuals to contribute to game development. It encourages participants to foster new friendships, increases their confidence and boosts opportunities within the community.

COMP Undergraduates Won the 3rd Prize in Huawei APAC ICT Competition 2022 and Advanced to the Global Final

Two COMP undergraduate students, **Mr Feng Yunlin** (BSc (Hons) in Financial Technology & Artificial Intelligence, Year 3) and **Mr Tang Man-Kit** (BSc (Hons) in Computing, Year 4) formed the team called "Polynomials" with a schoolmate from the Department of Land Surveying and Geo-Informatics. With their multidisciplinary knowledge, outstanding performance, and good teamwork, the team won the Third Prize under the Cloud in Huawei APAC Information and Communications Technology (ICT) Competition 2022.

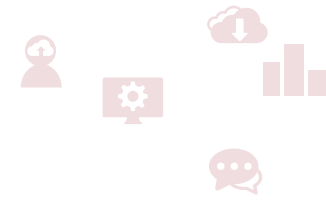


Themed Connection, Glory, Future, the Huawei APAC ICT Competition 2022 is the largest ICT skills contest in the Asia Pacific region developed by Huawei to promote a sound talent ecosystem. Participants had to compete in one of two technology tracks: Network or Cloud.

"Polynomials" stood out among 114 students who advanced to the regional final. The team is passionate about big data, AI, cloud, and geospatial technologies, and relevant applications in E-Commerce, IoT, and Smart City. Learning through a comprehensive set of tutorials provided by Huawei, "Polynomials" quickly got on board with the Huawei burgeoning ecosystem both in theory and in practice. They obtained in-depth knowledge of four kinds of state-of-the-art IT technologies as well as their evolutionary history and applications.

Congratulations to "Polynomials" and they will continue their journey for the Global Final in June 2022 which will be held in Shenzhen, China.

LEARNING & TEACHING



COMP Mentorship Programme 2021/22 Virtual Kick-off cum Career Talk

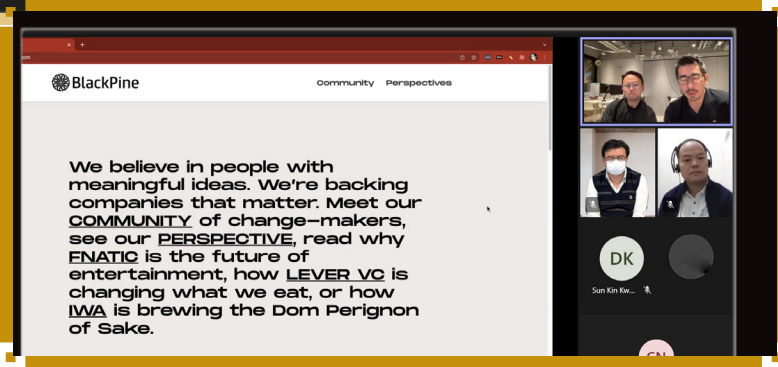
Starting from 2019/20, COMP has collaborated with the Computing Alumni Association (CAA) to launch the mentorship programme which aims to enhance students' holistic learning experience. This year, we have invited ten alumni who are professional practitioners and industry executives as our mentors. A virtual kick-off gathering cum career talk was held on 18 January.

Dr Henry Chan, our Associate Professor and Associate Head (Partnership & Collaboration) delivered the welcome remarks and thanked mentors for their contribution and support. **Mr Darron Sun**, President of CAA and the Mentorship Coordinator greeted all participants and briefly introduced the mentorship programme. One of our mentors, **Mr Tony Chung**, Senior Vice President of Data Services from Asia Satellite Telecommunications, was the invited speaker to give a talk on "My Career Story". At the end of his presentation, he summarised three important elements of career development: 'dedication', 'enjoyment' and 'persistent'.



We have also invited **Mr Christopher Cheung** and **Mr Bosco Lin**, representatives from BlackPine, to share a range of career and internship opportunities with the participants. Various breakout rooms were arranged for both mentees and mentors to have in-depth group discussions.

Under the mentorship programme, each participating student is assigned to a mentor and group activities with other mentors will also be organised to promote cross-industry sharing. In other words, it offers reciprocal opportunities for mentees to know about workplace culture, business trends and prospects in established professions, widening their exposure to different career paths and options while at the same time for mentors to understand the career aspirations of the younger generation. Through mentor-mentee activities, we hope to encourage students to acquire skills in career planning and personal development as well as broaden their social networks.



RESEARCH EXCELLENCE

SD-COMP Science Salon



To encourage interdisciplinary research synergy, COMP and the School of Design (SD) has launched the "Joint Research Scheme of School of Design & Department of Computing" for collaborative research projects jointly led by COMP and SD academic staff.

In this connection, a Science Salon was co-organised on 26 January 2022 to foster interactions between COMP and SD. Led by **Prof. Li Qing**, Chair Professor and Head of COMP, 12 COMP academic staff members participated in the event and presented projects in their research interests. Following the presentation, an insightful academic exchange continued in the interaction

session. Two COMP projects were demonstrated to the participants during the lab tour, allowing an in-depth understanding of their works. This event provided a platform to bridge the academic experts for potential research collaboration and enhancing intellectual exchange.

The scheme provides excellent opportunities for faculty members from both COMP and SD to conduct impactful collaboration and create synergies. Research themes include but are not limited to Augmented Reality and Virtual Reality, Internet of Things and Embedded Systems, Big Data and Machine Learning, Mobile Computing and Urban Informatics and Computer Graphics and Human Computer Interaction.



External Research Grants Secured in 2021/22

Research, Development and Application of Open Edge Computing System for Human-machine Collaboration – Prof. GUO Song

(RMB 2,170,000 from GDSTC Key Technologies R&D Programme)

This project involves close cooperation between academia and industry to explore the fundamental theory of open edge computing systems and foster frontier applications. The team aims to investigate hardware accelerator as the underlying infrastructure, and to design open universal computing software architecture for future AI applications. Moreover, the marriage of blockchain, cryptography, and privacy-enhancing technology, which endorses trustworthiness in the open edge computing system, are studied in this project.

Distinguished Seminar Series on Data Science & Artificial Intelligence

Co-organised with the PolyU Research Centre on Data Science and Artificial Intelligence (RC-DSAI), we have launched a Distinguished Seminar Series on Data Science and Artificial Intelligence since March 2021. World-renowned scholars were invited to share the latest technological development of data science and artificial intelligence with us.



Prof. Wang Jun
Chair Professor of Computational Intelligence
Department of Computer Science
School of Data Science
City University of Hong Kong
Hong Kong

18 Jan 2022

"Advances in Collaborative Neurodynamic Optimization"



Prof. Zhou Zhi-hua
Professor
Department of Computer Science and Technology
School of Artificial Intelligence
Nanjing University
China

17 Feb 2022

"The Long March of Theoretical Exploration of Boosting"

EVENT HIGHLIGHTS

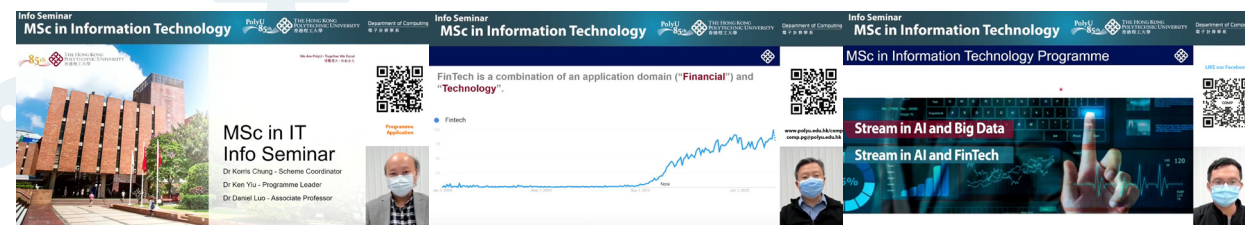
PolyU Info Day for Taught Postgraduate Programmes

On 8 January, COMP hosted an online info seminar to introduce the Master of Science in Information Technology (MScIT) programme during PolyU Info Day for Taught Postgraduate Programmes, attracting more than 150 participants.

Dr Korris Chung, Associate Professor and MSc Scheme Coordinator began the seminar by briefly introducing the Department. He then shared the trend of hot IT topics including Artificial Intelligence and Big Data with the attendees while **Dr Daniel Luo**, Associate Professor, talked about the development of Financial Technology. **Dr Ken Yiu**, Associate Professor and MScIT Programme Leader, further illustrated the programme structure, subjects offered, study patterns, admission requirements, etc.

In response to the rapid development of the global IT industry and the huge demand for AI and fintech talents, two streams are introduced in the MScIT programme: "Stream in AI and Big Data" and "Stream in AI and FinTech". Students enjoy the flexibility to choose their specialisms based on their own career goals and study plan. With the extensive network of COMP MSc alumni, students can acquire both advanced expertise and professional networks that help them scale new heights in their careers.

The seminar provided prospective students with an excellent opportunity to obtain first-hand information about our MSc programme and academic advice from COMP faculty members.



Workshop in JABEZCON 2022

Our education is not exclusive to COMP students, we have also devoted our efforts to nurturing the talents of younger ages. On 17 March, COMP successfully delivered a virtual workshop, "Introduction to Computing and Game Technologies", to 65 overseas high school students at the invitation of the Global Engagement Office (GEO). The workshop was part of the JABEZCON 2022, a student conference organised by the Jubilee Christian Academy in PolyU's international network.

Following the welcome speech by GEO, **Dr Henry Chan**, our Associate Professor and Associate Head, first introduced our department to the students, then continued by sharing basic computing concepts with the aid of interactive games. To enable students to gain a deeper understanding of game development and computer vision, **Dr Peter Ng**, our Teaching Fellow, lectured the students about "Game Technologies". Students were invited to join a virtual tour of our Virtual Reality and Game Lab and online polling that helped them comprehend the maths of game programming and machine learning. The workshop provided a great opportunity for the international students to know more about our programmes and study cultures.



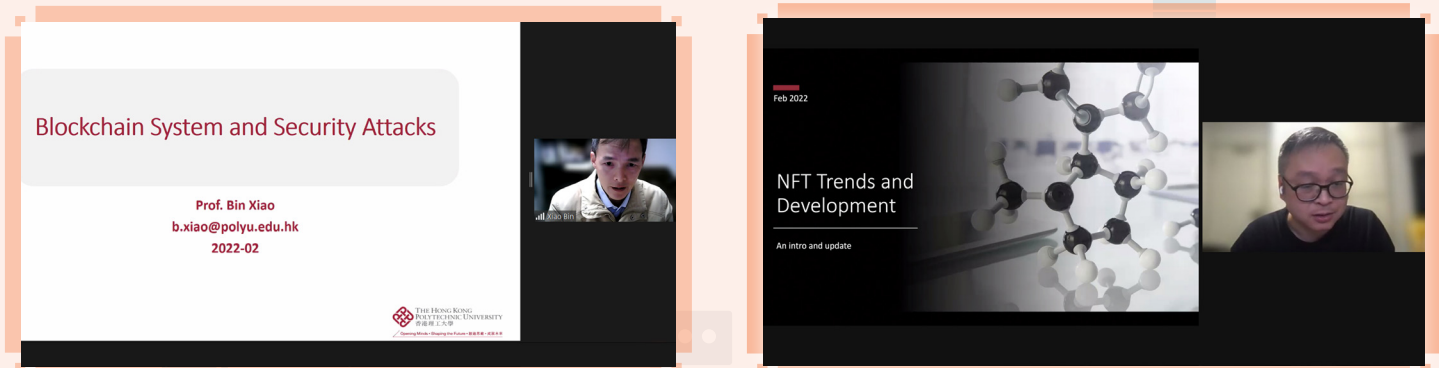
COMP x CAA Academic-Industry Seminar Series – Blockchain

Following the first seminar of the "COMP x CAA Academic-Industry Seminar Series" last October, the second seminar themed on "Blockchain" was held virtually on 16 February. More than one hundred students and alumni participated in the session. The seminar series is co-organised by COMP and the Computing Alumni Association (CAA).

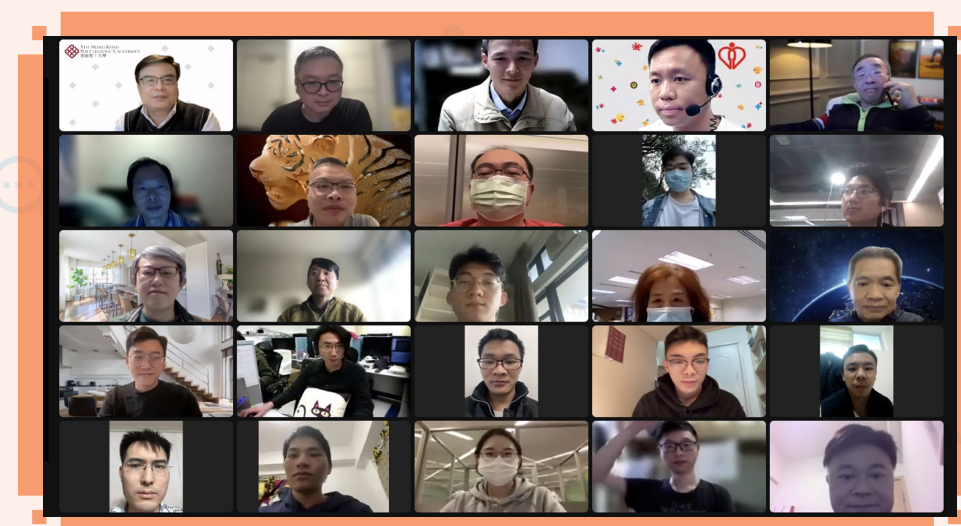
Blockchain technology can be extensively applied in many areas, from cryptocurrency, trading, NFT (Non-Fungible Token) to Metaverse. The blockchain system requires the mining process to generate new blocks, sustaining immutable transactions and data streams, yet there is the risk to be attacked. In particular, NFT has rapidly become one of the hot topics globally.

In the seminar, **Dr Henry Chan**, Associate Professor and Associate Head (Partnership & Collaboration) of COMP, delivered welcome remarks to the audience. **Mr Darron Sun**, President of CAA and Head of Information Technology of Hong Kong Housing Society, also gave a warm welcome.

Prof. Bin Xiao, COMP Professor, then presented possible security attacks on blockchain systems, including mining attacks. He further talked about power adjusting withholding and Bribery Selfish Mining. On the other hand, **Mr Dick Fong**, Venture Leader of McKinsey & Company, at the same time an alumnus from COMP, represented CAA to be the second invited speaker to give an overview on NFTs and their latest development by illustrating various examples. He also generously shared his knowledge related to the blockchain with the audiences. There were in-depth discussions and fruitful interaction between the speakers and the participants during the Q&A session.



To encourage lifelong learning, strengthen the connection between COMP and Alumni, as well as foster the possible collaboration between academia and industry, COMP and CAA kicked off the "COMP x CAA Academic-Industry Seminar Series" in the academic year of 2021/22. Various academics and industry professionals will be invited to share their insights and experiences on important computing topics.



ALUMNI CORNER

Outstanding Alumni Award of PolyU 2022

The year 2022 marks the 85th Anniversary of PolyU. In celebration of this important milestone, the University has introduced the Outstanding PolyU Alumni Award (OPAA) to publicly recognise our distinguished alumni's diverse accomplishments and contributions to the community and their alma mater. OPAA was conducted at three levels: Department level, Faculty/ School level and University level with 4 achievement categories, namely "Professional Achievement", "Entrepreneurial Achievement", "Scholarly Achievement", and "Community Service Achievement".

Department Award

We are glad to announce that **Mr Andy Wan**, Director of Transformation & Delivery, Chief Operating and Information Office of AXA Hong Kong and Macau, is the recipient of the Outstanding Alumni Award in "Professional Achievement" of PolyU Department of Computing.

Andy received a Higher Diploma in Information Systems in 2000 and a Bachelor's Degree in Computing, both from PolyU. Building his career from the ground up as an IT programmer, Andy has worked in two different Global Fortune 500 multi-national insurance companies. He has been dedicated to the wealth management and financial services industry for 20 years, with extensive experience across various domains, such as technology, operation, distribution, project management, digital and business transformation for the local and regional offices. Being a passionate leader with a strong inner drive, Andy's distinguished achievements, exemplary leadership and professionalism have helped him gain a high reputation from the industry.

Apart from the active participation in our alumni activities, Andy also provided great support to the Department and PolyU, particularly in the COMP Mentorship Programme, in which he has served as the Mentor since 2020. Moreover, in the career talk, 'Preparing to build a Professional Journey', Andy shared his professional knowledge, leadership mindset and career journey with our students.



Faculty Award

Dr Abraham Lam - Outstanding Young Alumni Award in Entrepreneurial Achievement of PolyU Faculty of Engineering

Dr Abraham Lam - Director of MEGA Automation Ltd and Shenzhen FUSQUARE Technology Ltd
Abraham acquired his bachelor's degree in IT and PhD from COMP. He is keen to apply ICT to the built environment and contribute to the development of a smart and sustainable city. He is also an active evangelist to adopt emerging technologies into facility and property management. He established an R&D team in Qianhai, Shenzhen to bring the research work into real-world applications. His successful technopreneurial journey has been featured by media and associations. He serves as the COMP Mentor and the external member of the Departmental Advisory Committee. To recognise his achievements, he was elected as one of the COMP outstanding alumni award in 2019.

Mr Darron Sun - Outstanding Alumni Award in Professional Achievement of PolyU Faculty of Engineering

Mr Darron Sun - Head of Information Technology, Hong Kong Housing Society (HKHS)
Darron obtained two Master's degrees from PolyU. After graduation, he has made significant contributions to COMP, initiating and driving a new Mentorship Programme in particular. He provided various internship opportunities to COMP students in recent years. Currently, he is serving as the President of Computing Alumni Association (CAA). He is actively involved in various social and community services. Mr Sun was named to the World Association for Cooperative & Work-Integrated Education (WACE) Co-op Hall of FAME in 2018 in recognition of his efforts in nurturing the next generation of professionals.



DEPARTMENT UPDATES

New Administrative Staff

Warmest welcome to the new members who have recently joined the Department.

Ms Angie Fan
as Senior Executive Officer

Ms Samantha Leung
as Executive Officer

Decrypts and Connects Blocks of Knowledge in the **NEW** Master of Science in Blockchain Technology (MScBT) (2022/23 entry)

1ST Master Programme in Hong Kong

Decrypts & Connects Blocks of Knowledge

We are excited to announce that the new MSc in Blockchain Technology programme is now accepting applications. This programme is designed to nurture professionals who will be proficient in blockchain and related technologies to analyse, design, implement and evaluate Fintech and other related systems, products and services.

Application Deadlines:

- 30 May 2022 (Non-local)
- 30 June 2022 (Local)



Application & Programme Info



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