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# 人工智能課程 孕育百業專才

# AI in All Walks of Life

對於人工智能，不同人有不同想像，從大眾電影中可見端倪。以《星球大戰》的R2-D2和C-3PO、《未來戰士》的T-800，以及《Wall-E》的同名主角為例，人工智能等同有思想和身分的實體機械人，但在《鐵甲奇俠》中的「卓維」，卻是一套無形系統，既是主角的管家，也是戰友。

人工智能盛行，很多產物都高舉AI幌子，叫人眼花撩亂，我們應如何分辨？艾倫•圖靈於1950年提出「圖靈測試」，如果一台裝置能夠與人對話而沒有被認出，便屬於人工智能。然而，科技發展一日千里，人工智能的定義也與時並進，計算機科學與工程學系**金國慶**教授提出一項標準：「人工智能是懂得學習的，可以進步，並能根據使用者的需要適應配合。」以人臉辨識為例，我們把愈多人臉圖像輸入深度學習網路，它識別人臉的準確度就愈高，甚至可以分辨出對象的年齡、種族和情緒等。相反能感應環境、自動調節參數的快思邏輯（fuzzy logic）電風扇雖然可以因應溫度高低調節風速，但只算智能，不屬於人工智能。

有見本地以至全球缺乏人工智能專才，中大計算機科學與工程學系今年開辦「人工智能：系統與科技」學士課程。香港積極推動創新科技和建設相關配套，例如擴充將軍澳工業邨的科學園和成立落馬洲河套區港深創新及科技園等，預料創造五萬個職位。金教授指出，新課程既是回應社會發展的需要，也是發揮中大工程學院的強項。學生可以由統計學、機器學習，以至演算法的設計，逐步學習構建一套完整人工智能系統。

另一特點是，學生可以按興趣和志願選擇專修範圍，包括智能生物醫學、智能多媒體處理、大規模人工智能理論與系統，以及智能製造與機器人學。金國慶教授說：「課程有四個專修範圍，一個以理論為主，三個以應用為本。就像建屋一樣，要有根基才能向上興建，『大規模人工智能理論與系統專修』便是根基。」

「智能生物醫學」是應用專修範圍之一，現時基因組研究崛起，若要從海量的基因資料中，探索個別基因與某些疾病的關連，演算法便大派用場。若發現某一基因是引致某種癌症的高危因素，擁有該基因的人便可及早調節生活習慣，降低發病機會。

除了人臉辨識外，「智能多媒體處理」亦涵蓋無人駕駛、醫療造影、語音和音訊處理等。以「錯字和粵語檢測系統」為例，該系統由系統工程與工程管理學系**黃錦輝**教授的團隊研發，他們把高中生的中文作文試卷、課本和辭典等材料輸入系統，讓其「學習」。當中小學生把作文輸入，系統便會按上文下理找出錯別字和區別簡體字。


「智能製造與機器人學」則是把人工智能應用於機械裝置，例如搬運機械人。機械與自動化工程學系**劉雲輝**教授及其團隊研發的「視覺導航無人搬運車」，把廠房的平面圖輸入智能系統，系統收集廠房環境的相片並加以分析，便可規劃出搬運路線，自主行走，不用人手操作。

縱然現時人工智能大多只有單一領域的功能，不像「卓維」般身兼多職，可以處理複雜任務，但它確確實實在各方面協助人類改善生活。猶如上世紀末互聯網和電郵誕生，人工智能勢必滲入各行各業，改變其營運模式，繼而改變世界。

The perception of artificial intelligence (AI) is varied, as shown in popular movies. For R2-D2 in *Star Wars*, T-800 in *The Terminator*, and the eponymous hero in *Wall-E*, AI is personified by a robot which has cognitive ability and identity. When it comes to J.A.R.V.I.S. in *Iron Man*, which is the hero's servant and council, AI takes the shape of a virtual system.

With so many things and products given the tag 'AI,' how can we know what AI truly means? In 1950, Alan Turing proposed his now-famous 'Turing Test': A machine could be classified as AI if it could talk with a human without it being recognized as a non-human entity. The definition of AI, however, has continued to evolve with technological advancement. Prof. **Irwin King** of the Department of Computer Science and Engineering proposed a new definition: 'AI has the capability to learn and improve, and can adapt to the users' needs.' For example, the more facial pictures are input into a deep-learning network, the higher its facial recognition accuracy will become. It can even distinguish the age, ethnicity, and emotion of a subject. As such, a fuzzy logic fan is 'smart' instead of 'AI', although it can adjust its speed as the temperature changes.

In view of the increasingly high demand for AI professionals in local and even global employment markets, the Department of Computer Science and Engineering has launched an undergraduate programme in Artificial Intelligence: Systems and Technologies (AIST) this year. The Hong Kong government has formulated policies to promote the development of innovative technologies, including plans for the expansion of the Science Park in Tseung Kwan O Industrial Estate and the establishment of HK-Shenzhen Innovation and Technology Park in Lok Ma Chau Loop. It is expected that 50,000 jobs will be created. Professor King pointed out that the new programme addresses the needs of society on the strengths of the Faculty of Engineering. From the studies of statistics, machine learning and algorithm design, students could learn to construct an entire AI system step by step.

Based on their interests and career goals, students may choose a specialized stream from four options: Biomedical Intelligence, Intelligent Multimedia Processing, Large-scale Artificial Intelligence Theory and Systems, and Intelligent Manufacturing and Robotics. Professor King said, 'The programme offers four specialized streams, one theoretical and three application-oriented. Like building a house, it starts from the foundation. "Large-scale Artificial Intelligence Theory and Systems" is the foundation.'

▲ 金國慶教授 Prof. Irwin King

Biomedical Intelligence is one of the application-oriented specialized streams. Genomic research has gained currency in recent years. Algorithms could be applied to a large database of genetic information to explore the relationship between a gene and some diseases. If it is found that a particular gene is a risk factor for a cancer, a person carrying that gene may be advised to adjust her lifestyle to reduce the cancer risk.

In addition to facial recognition, 'Intelligent Multimedia Processing' covers driverless cars, medical imaging, and speech and audio processing. Take 'Automatic Colloquialism and Typo Detection System for Chinese Language' as an example. The research team led by Prof. **Wong Kam-fai** of the Department of Systems Engineering and Engineering Management developed the system which can 'learn' from the Chinese compositions of senior secondary students and feed on the content of textbooks and dictionaries. When a secondary or primary school student uses the system on her compositions, the system can identify the typos or misused words. It can also differentiate between the simplified Chinese characters and the traditional characters.

'Intelligent Manufacturing and Robotics' applies AI in mechanics, one such product being the robots for transporting goods. The team led by Prof. **Liu Yun-hui** of the Department of Mechanical and Automation Engineering has developed a self-piloted forklift truck. Its AI system will analyse the floor plans and pictures of the warehouse and devise the route the autonomous truck takes to transport the goods.

Although most AI applications have only functionality in one particular area, unlike the versatile J.A.R.V.I.S., they are making the lives of many easier. AI will proliferate like the Internet and the e-mails born at the end of the last century in all walks of life to change many ways of working and living.

*M. Mak*


經歷文憑試和漫長暑假，年輕學子在8月下旬紛往中大報到和參與各項迎新活動，為往後四年或更長的山城歲月揭開序幕。今年中大透過聯招辦法錄取二千八百四十六名文憑試考生，99.2%以中大課程為Band A選擇。於文憑試考獲五科5**成績或以上的考生中，逾半獲中大錄取，當中包括七位考獲七科5**及五位考獲六科5**的考生。

以最佳五科成績中位數計算，全港十個收生分數最高的課程中，四個為中大課程，計為連續六年全港收生成績中位數最高的醫學（環球醫學領袖培訓專修）、環球商業學、醫學、計量金融學及風險管理科學。

本年經聯招入讀醫科的三百七十七位學生，逾六成選擇中大。以文憑試滿分四十九分計算，考獲四十六分或以上而修讀醫科的七十四名學生中，逾三分之二選擇入讀中大醫學院。全港八位考獲七科5**而入讀醫科的學生中，中大佔其七。

此外，中大取錄了二十二位獲全額學費贊助的第五屆民政事務局「多元卓越獎學金」得主，還透過大學的「運動員獎學金」錄取二十五位運動精英，包括三位港隊代表。

入讀中大的新鮮人，學業品行俱優，不少更體藝超群，契合大學的人文視野與全人教育理想。

After the travails of the Hong Kong Diploma of Secondary Education (HKDSE) examination and the long rest in the summer, students newly admitted to CUHK were readying themselves for their college days and taking part in August's orientation activities. This year, through the Joint University Programmes Admissions System (JUPAS), CUHK admitted 2,846 HKDSE takers, of whom 99.2% made CUHK their Band A choices. Among candidates who achieved the highest level of 5** in five subjects or above in the HKDSE across the territory, over half were admitted by CUHK, including the seven top-scorers with 5** in seven subjects, as well as the five students with 5** in six subjects.

Four CUHK programmes made the cut of the 10 most competitive programmes in the JUPAS institutions by reference to the median scores of the best five subjects. These are: Medicine (Global Physician-Leadership Stream), Global Business Studies, Medicine, and Quantitative Finance and Risk Management Science. Medicine (Global Physician-Leadership Stream) has been the programme with the highest median admission score across the territory for six consecutive years.

For Medicine programmes, over 60% of 377 students accepted to local medical schools via JUPAS chose CUHK. With the full score of DSE capped at 49, more than two-thirds of 74 students who got 46 marks or above and pursue medical degrees are with CUHK. Among the eight students with 5** in seven subjects or above who identify medicine as their vocation, seven were admitted by the University.

Twenty-two admittees were awarded the fifth 'Multi-faceted Excellence Scholarship' under the auspices of the Home Affairs Bureau which covers their tuition fees in full. Twenty-five students have been admitted through the University's Sports Scholarship Scheme with their outstanding performance in sports, three of whom representing Hong Kong in their respective fields.

Our freshmen are exemplary in both academic work and character. Many of them are outstanding athletes, too. CUHK's humanistic orientation and whole-person educational ideal will be fertile ground for their growth.

*Amy L.*

## 嗨！新鮮人
## Meet a Few Freshmen!

### 江富軒 Franco Kong

獲社會福利署頒授義務工作金嘉許狀的富軒曾任聯合國兒童基金會青年使者，探訪內地山區農民及兒童，宣揚兒童權益。他亦曾統籌九龍區長者義診，逾二百位長者受惠。富軒深信「千里之行，始於足下」，特入讀社會學系，冀藉了解有關社會的理論，為社區作更大貢獻，帶領本港社會邁步向前。

An awardee of the Gold Award for Volunteer Service, Franco was a UNICEF Young Envoy who advocated children's rights and called on farmers and children living in rural, mountainous areas in mainland China. Once he coordinated a free medical consultation project for the elderly in Kowloon, benefitting more than 200. Believing that 'the journey of a thousand miles begins with the first step', Franco chooses to read Sociology so that he may have a thorough understanding of society that enables him to better serve his beloved hometown.

### 嚴爽 Yim Shong

工商管理學士綜合課程新生嚴爽曾任就讀中學的學生會副主席，並為商業、數學、普通話及升學就業輔導等多個學會及組別幹事，亦多次擔任活動司儀。她熱衷於義工服務，關懷兒童、長者，積極參與境外交流。學術方面，嚴爽文、理、商兼善，為2016年全國青少年科技創新大賽「創意之星獎」得主，以及2018年荃葵青區優秀學生。

Admitted to the Integrated Bachelor of Business Administration programme, Shong has served as the vice-president of the students' association and executive member of clubs and teams ranging from business, mathematics, Mandarin to career guidance, as well as being MC on various occasions. She devotes herself to voluntary work for children and the elderly, and has taken part in an array of exchange programmes. Well-rounded in arts, science and business subjects, she clinched the 'Star Innovator' award in The China Adolescents Science and Technology Innovation Contest in 2016 and the Outstanding Students Award of Tsuen Wan, Kwai Chung and Tsing Yi Districts in 2018.

### 麥子詠 Mak Tze-wing

獲頒運動員獎學金最高級別「卓越運動獎學金」的子詠是乒乓球港隊成員，她於國際和地區的個人賽屢次奪冠，團體賽亦名列前茅。重視團隊精神的她入讀健康與體育運動科學學系，期望鑽研運動心理學，以知識與經驗協助運動員提升心理素質，發揮所長。

Conferred the Sports Excellence Scholarship that is the top prize of the Sports Scholarship Scheme, Tze-wing is a Hong Kong Table Tennis Team representative who has laid claims to championships and top prizes in international and regional singles and team matches. An athlete of teamwork who tirelessly inspires her teammates, Tze-wing hopes to explore sports psychology in the Physical Education, Exercise Science and Health programme to help boost the mental toughness of fellow athletes.


# 手心相應
# Of the Heart and Hand

## 黃鴻亮醫生游刃手術、研究與藝術
## Dr. Randolph Wong opens up about surgery, research and art

他身穿筆挺白袍，步履輕快踏進威爾斯親王醫院的會議室，面露微笑。眼前的他，既是畫家，又是外科醫生，跟他打招呼，我意識到自己握着的很可能是全亞洲最靈巧的手。他的眼睛機敏而深邃，前面架着的黑框方型眼鏡跟手腕上的蘋果智能手錶很是相襯。他介紹自己稱Randolph，態度謙沖隨和。一身醫護裝束的他平易近人，難以令人想到他是位頂尖心胸肺外科醫生。

心胸肺外科專科醫生**黃鴻亮**是中大名譽臨床副教授，也是威爾斯醫院心胸肺外科主管和顧問醫生、研究員、學者和藝術家。他是醫院管理局心胸肺外科專責小組主席、心胸肺外科委員會秘書、亞洲心血管與胸外科學會成員，以及美國胸肺學院和歐洲心胸外科協會院士。他的名字後跟着一連串英文簡寫頭銜，與其專業履歷一樣顯赫奪目。

黃醫生是位不可多得的人才，他走在心胸肺外科前沿，涉獵多方，足跡遍及手術室、演講廳和研究實驗室等。繁重的工作如泰山壓頂，但他處之泰然，說：「我朝夕與生死為伴，以往會擔心未必能應付這種壓力，但原來我在高壓狀態下表現更好，這只能說是與生俱來。

「有次我們為一名孕婦施手術，她肚內的胎兒有三十多週大，我們成功救活母和子。要知道，這類手術的死亡率高達200%。」

說起生死關頭，他神情自若且不帶絲毫自詡，足以看出與死神角力在他來說是多麼稀鬆平常。「我們面對各式各樣的病人，施行的手術涵蓋微創、大型入侵性開胸、導管、內窺鏡手術等。」

當初，黃醫生沒有預計自己會與手術儀器為伍。在醫學院的歲月，他一心想代父親圓夢，成為內科醫生。黃父成長於文革年代，身為十兄弟姊妹中的長子更要負起照顧家庭的重擔，唯有放棄學醫的夢想。

「父親礙於時代和家庭被迫放棄理想，我想承繼他的行醫志向。雖然我自小的興趣是畫畫，報讀大學時，我依從父親的意思以醫科為第一志願，最後中大醫學院錄取了我。」

黃醫生憶述：「我入讀醫學院，志在成為醫生，為病人施藥，沒想到一次在心胸肺外科實習的經歷啟迪了我。當時第一次觸碰手術刀，也目睹了最先進的外科手術程序。」

心臟結構錯綜複雜，它怎樣衰竭、醫生如何施手術、如何令它復甦？當時的他被深深吸引。談起初次目睹手術的情景，黃醫生至今仍按捺不住興奮之情：「心臟的運作太奇妙了，我不敢相信小小手術能改寫人的生命。那次經歷完全扭轉我的事業路向。」

### 鋒刃上的科技

香港人口逾七百萬，卻只有四十名註冊心胸肺外科專科醫生。幸而黃醫生及其團隊開展了世界頂尖的研究，他們往往能率先採用新的醫療程序和手術設備。

「我的團隊主力革新主動脈手術。以一種用於取代主動脈的混合式冷凍『象鼻』支架移植物為例，我們已經在三十七宗個案中應用。」

黃醫生的英挺坐姿，流露出對其主動脈剝離手術團隊的自豪感，尤其是這類手術的死亡風險甚高。主動脈壁破裂，血液從裂口進入血管夾層，嚴重起來會阻礙血液流通，導致器官缺血，此即為灌注不良綜合症，是足以致命的狀況。他解釋道：「美國病人接受此類手術後的死亡率為20至25%，德國病人的死亡率為17至20%，而我們的數字僅是少於5%。」

黃醫生手術團隊運用具有逾五千名病人資料的數據庫，預測未來手術的風險因素，並設定縱向研究的基線。根據2008年冠狀動脈搭橋手術的紀錄，黃醫生團隊的病人十年生存率為76%，這是極高的比率，有賴於團隊善用數據庫，對細節一絲不苟。

為此，由黃醫生與其介入放射科、麻醉科和血管外科的同事組成的主動脈跨部門團隊在2018年贏得了醫院管理局新界東醫院聯網的「傑出團隊獎」。

### 能醫擅藝

黃醫生的醫學成就卓越，也視繪畫為終身興趣。「興趣」一詞可能過於輕描淡寫，其實他才情橫溢，技藝千錘百鍊。

講到藝術，黃醫生萬分雀躍。「繪畫讓我在百忙中找到喘息的空間，過程十分寫意。我畫過大量關於醫學的畫，也描繪過外科醫生的手術過程，當中細節，外行人委實難以描摹。」

▲ 描繪外科醫生施手術的其中一幅作品
One of Dr. Wong's paintings of a surgeon in action

他用手比劃，娓娓道來自己曾花四年時間，一點一點臨摹約翰•康斯特勃的十九世紀風景畫《乾草車》。「這幅畫本身很複雜。要放大畫作的一小部分，例如一棵樹或一隻狗，需要幾個小時。我每次畫一小部分，宛如透過康斯特勃的眼睛欣賞壯麗的景觀。」

對待手術和畫畫，黃醫生都着重準備功夫，細緻研究每個步驟，正如任何工藝都需要穩定、靈巧的觸感。他解釋：「繪畫和手術有許多相似之處，兩者都需要精心策劃、化繁為簡，逐一擊破。」

無論是在手術中挽救性命，還是為藝術創作賦予生命，黃鴻亮醫生的一雙巧手都隨時就位。

With a brisk stride, a man sporting a crisp white lab coat and a smile entered the conference room at the Prince of Wales Hospital. As we greeted one another, I realized that, as both painter and surgeon, the individual before me controlled a pair of the most dexterous hands in Asia. The squared, black-rimmed glasses framing his astute, dark eyes matched the colour and shape of his Apple Watch. The surgeon introduced himself as 'Randolph'. Between his cordiality and easy-going mien, a stranger would not have guessed his status as an elite cardiothoracic surgeon, notwithstanding his medical attire.

Dr. **Randolph Wong**—Specialist in Cardiothoracic Surgery, Clinical Associate Professor (honorary) of CUHK, and Consultant and Head of the Division of Cardiothoracic Surgery at the Prince of Wales Hospital—is an accomplished surgeon, researcher, academic and artist. He is chairman of the Cardiothoracic Surgery Specialty Group of the Hospital Authority, secretary of the Cardiothoracic Surgery Board of Hong Kong, a member of Asian Society for Cardiovascular and Thoracic Surgery, and fellow of American College of Chest Physicians and European Association of Cardiothoracic Society. The alphabet soup of degrees and letters following his name is equally as impressive as his held positions.

Dr. Wong is of a rare breed—he stands as one of the foremost experts in his field, extending his reach into multiple corners of the profession, from operating theatre to lecture hall to research laboratory. Despite the high-pressure stakes of his practice, Dr. Wong remains unfazed. 'In the past I worried that I may not be able to cope with the stress, this constant threat of mortality. But I've realized I actually perform better under intensive stress. It's almost instinctive,' explained Dr. Wong.

'Once we operated on a pregnant woman, 30-something weeks into her gestation period,' Dr. Wong continued. 'She had a baby in her. We saved both her and the baby. This is the only operation that can have a 200% mortality rate.'

He spoke of these happenings in a relaxed fashion though without levity, betraying the regularity with which Dr. Wong encounters such ordeals. 'We deal with minimally invasive surgery, maximally invasive open surgery, catheter-based, endoscopic—the range of patients is extremely broad.'

Initially, however, Dr. Wong didn't foresee himself wielding surgical instruments. A significant portion of his time in medical school was completed with the belief he would become a physician, something his father had once dreamed of for himself. The cultural revolution in China presented additional challenges on top of familial responsibilities (his father was the eldest brother of ten siblings), ultimately precluding Dr. Wong's father from attending medical school.

'With everything my father had to go through, it was put into my hands to become a doctor. Though my main interest since my youth was drawing, my father told me to select medicine as my first subject choice when I applied to schools. Then CUHK Medicine accepted me.'

'I entered medical school interested in becoming a doctor and using medicine to help people. But after my internship rotation in cardiothoracic surgery, my passion took a new direction. I was exposed to knife and scalpel. I witnessed state-of-the-art surgical procedures,' recalled Dr. Wong.

The intricacies of the heart—how it failed, how to operate on it, how to revitalize it—left a striking impression on Dr. Wong. He recounted his first exposure to surgery with both wonder and enthusiasm. 'I was so amazed by the workings of the heart. I couldn't believe what you could do through surgery to change someone's life. I did a complete 180 degree turn in my career path,' he explained.

▲ 黃醫生臨摹約翰•康斯特勃《乾草車》的畫作
Dr. Wong's rendition of John Constable's *The Hay Wain* of 1821

## The Cutting Edge

Despite more than seven million people living in Hong Kong, only 40 cardiothoracic specialists are registered to serve the population. Fortunately, Dr. Wong and his team carry out some of the most pioneering research in the world. They are often the first to try out new procedures and operating devices.

'My team focuses on aortic innovations. For example, there's a stent graft called the hybrid arch frozen elephant trunk, which can be used to replace the aorta. We've applied it to 37 of these cases now.'

Dr. Wong's upright posture betrayed his pride for the efforts of his surgical team in aortic dissection, a particularly deadly condition with steep mortality rates. Malperfusion syndrome stems from a ruptured aortic wall, often with fatal implications. 'This disease in America has a 20–25% mortality rate with operation. In Germany, around 17–20%. In our unit, it's less than 5%,' explained Dr. Wong.

Dr. Wong's team uses a comprehensive database with information from over 5,000 patients. It helps project risk factors for future surgeries and forms a baseline for longitudinal studies. Notably, based on coronary bypass grafting for patients in 2008, Dr. Wong's team records a 76% ten-year survival rate—an extremely high mark ascribable to assiduous database use and attention to detail.

For obvious reasons, Dr. Wong and his colleagues from interventional radiology, anaesthesiology, and vascular surgery—the Aortic Multidisciplinary team—landed the 'Most Outstanding Team' of the New Territories East Cluster of Hospital Authority in 2018.

## A Versatile Hand

Despite Dr. Wong's various medical endeavours, he continues to make time for his lifelong hobby of painting. 'Hobby' understates his artistic faculties; his works reveal a talented brush stroke and years of practice.

When asked about his art, Dr. Wong divulged in earnest. 'I use painting to relieve myself from my busy schedule, it's relaxing for me. I've painted a great deal of medical paintings and paintings of surgeons in action because, well, unless you're a surgeon it would be difficult to accurately depict a surgery.'

Animating the conversation with gesticulations, he explained how, bit by bit, he even painted a simulacrum of John Constable's 19th century landscape *The Hay Wain* over a period of four years. 'The painting is complex. To enlarge one small piece of the portrait, like a tree or dog, would take me a few hours. But by painting small portions at a time, it was like seeing a great landscape through a painter's—Constable's—eyes.'

Dr. Wong's approach to both surgery and painting emphasizes preparation and careful study; each craft requires a steady, adroit touch. 'Painting and surgery share many parallels,' he explained. 'Both require meticulous planning and breaking down large problems into a series of smaller, achievable issues.'

Whether saving a life in surgery or bringing to life an artistic creation, Dr. Randolph Wong remains ready to lend a (highly dexterous) hand.

*Phil Rosen*

## 榜上友名 / Roll Call Alum

# 教出贏在起跑線的孩子？

# Raising the Kid who Wins at the Starting Line?

**洪之韻**醫生不但是知名的兒科醫生，更從事兒科教學、研究和與兒童有關的社會服務。洪醫生擁有自己的兒科診所，她也是中大兒科學系榮譽臨床副教授，在其診所為醫科生提供兒科臨牀培訓。她亮麗的履歷，使她獲選為2015年十大傑出青年，以及於2018年當選逸夫書院第一屆「逸夫之星」傑出校友之一。

掃描閱讀全文

Scan to read the full story

洪醫生認為香港兒童最需要自由、空間、休息、運動，還有父母的關懷。香港的教育制度側重學術成績，兒童被迫提早學習高年級知識。她覺得孩子上太多補習班，會失去學習動機和好奇心。

她說兒童的品格比學術水平重要。說起她的女兒，她希望她們尊敬師長和有責任感，也期望她們能發掘興趣、堅持到底，並有勇氣克服困難。

「我希望女兒正直、仁慈、富同情心、合群。這些特質比知識重要。」坊間流行「贏在起跑線」，洪醫生不相信這句話，因為那些「贏在起跑線」的人也不一定時時勝過別人。

對洪醫生來說，教養孩子的訣竅就是時刻陪伴和鼓勵子女，幫助他們克服人生的挫折，做到最好，活得精彩。

Dr. **Emily Hung** is a seasoned paediatrician, teacher and medical researcher heavily involved with community services for children. She currently runs her own clinical practice while serving as an Honorary Clinical Associate Professor of Paediatrics at CUHK. Her accomplishments have won her numerous accolades, and in 2015 she was one of the nine winners of the 'JCI Hong Kong Ten Outstanding Young Persons Selection' awards, and in 2017, one of the three 'Stars of Shaw' of the Shaw College in CUHK.

In her opinion, children in Hong Kong need freedom, space, rest, exercise and, above all, the attention of their parents. The education system overemphasizes academic performance and children are forced to learn knowledge and skills before they are ready. She is concerned children who attend too many tutorial classes will lose their motivation and curiosity to learn.

What is more important than book knowledge is a child's attitude. She wants her daughters to respect teachers and have a sense of responsibility. She also wants them to discover what they love and to follow their passion, as well as have the courage to solve problems and overcome hurdles.

'What I expect of my children is that they should be righteous, kind-hearted, compassionate and collaborative. I believe these qualities are more important to nurture and acquire than book work.' She does not believe in 'winning at the starting line'—commonly held by local parents—because those who 'win at the starting line' will not win all the time.

The crux of parenting, to Dr. Hung, is being there for your children in times of adversity so they can be resilient and live their lives to the fullest.

*Eliza Chan*

## 學術探奇 / Scholarly Pursuits

兩個或以上的漢字可以組成複合詞，產生不同意思，例如「足」和「球」組成的「足球」。我們看見「足球」，隨即知道所指何物。然而，就在辨文認字的電光火石之間，我們受到一籃子因素影響，決定我們辨認詞語的快慢。就如「午飯」和「早飯」兩個同樣簡單的詞語，我們能夠更快辨認「午飯」。教育心理學系**謝志成**教授就辨認雙字複合詞進行研究，正好解開快慢之謎。

謝教授選取大約二萬五千個詞語，招募五百九十四名母語為粵語的中大學生，要他們辨認實驗中顯示的是真有其詞，還是非字（例如「禁截」、「寒泣」）。學生在實驗中看到約一千四百個雙字複合詞和一千四百個虛構的非字。研究團隊再計算每個詞語的平均辨認時間，繼而分析辨認時間和詞語特徵（包括非字）之間的關係。

謝教授發現，一些詞語本身的特徵，可以影響我們辨認詞語的反應時間。一個常見的詞語，我們不假思索便能辨認出來。「午飯」二字，平均僅要0.57秒辨認；「早飯」就要0.63秒，其中一個可能的原因是，「午飯」在香港比「早飯」更為常見。

複合詞二字有前後，我們辨認時會不會被前面的字牽引，還是後面的字喧賓奪主？謝教授一語道破：「其實詞語左方的字和右方的字，對我們辨認詞語的影響近乎一樣。」現在不少刊物是由左至右閱讀，理論上我們會「先入為主」，詞語左方的字比右方的更影響我們辨認詞語的反應。另一方面，語言學中的「中心語居右原則」指出，部分複合詞最右方的元素主導了語意和詞類，例如「火車」的「車」顯示火車是交通工具；「白飯」的「飯」指出白飯是一種糧食，理論上右方的字對我們辨認詞語的反應影響更大。然而，謝教授的研究證實，我們辨認詞語時，左右平等。

複合詞的語意與其中單字的語意相近，也會讓人更快辨認出來。例如「花園」與「花」和「園」二字皆有關聯，而「花生」卻與「花」和「生」無關，因此我們能夠更快辨認「花園」。事實上，接受測試的中大學生用0.54秒認出「花園」，「花生」則要0.6秒。

要從洋洋字海中有系統地篩選出近二萬五千個複合詞，還要創造數以萬計非字，單是測試前的準備功夫，已見艱巨。憑着這項研究，謝教授榮獲2018至19年度傑出研究學者獎。

*M. Mak*

# 詞辨是非

# The Puzzle of Chinese Word Recognition

掃描閱讀全文

## 不戰而屈癌細胞
## Putting the CAR-T before Cancer


醫學院將開展針對血癌的細胞治療臨床研究，冀能增加患者存活率和延長其存活期。此細胞治療為免疫療法，利用患者自身免疫反應殲滅癌細胞，故能避免傳統治療如化療和血液幹細胞移植引起的嚴重併發症。治療會先從患者血液提取抵禦外來感染、殺死癌細胞的T細胞，然後在合規格實驗室內，運用基因技術為原本無法識別隱密癌症的T細胞裝上有如雷達的受體。當經基因改造的T細胞輸回患者體內，它們便可鎖定癌細胞位置，將其消滅。為配合研究，大學將設立全港首個符合「生產質量管理規範」的嵌合抗原受體T細胞（CAR-T細胞）實驗室，預計2020年落成。

The Faculty of Medicine is to start clinical trials of a cellular therapy that prolongs overall survival of patients with haematological malignancies. An immunotherapy that harnesses the power of the patient's own immune system and hence avoids complications in conventional treatments like chemotherapy and haematopoietic stem cell transplant, the Chimeric antigen receptor-T cell (CAR-T cell) therapy extracts T cells, which fight infections and kill cancer cells, from the patient's blood. By modifying these cells genetically in a qualified laboratory and building in radar-like receptors on them, the T-cells can then recognize and attack cancer cells, including those that used to evade the immune system, upon being reinfused into the patient's body. Tying in with the trials, a CART-cell laboratory licensed with Good Manufacturing Practice, the city's first, is expected to be built by 2020.

## 速製納米材料
## Nanomaterials Made Quick and Easy

生物醫學工程學系邊黎明教授及其研究團隊發明製造單鏈納米物料的新方法，效率比傳統辦法提升二十倍。長久以來，研究人員重視精準控制合成物料中分子設計的結構和功能，因這對調校大小各異的生物物料的性質和功能起着關鍵作用。過往，單鏈聚合物納米粒子或納米凝膠只能夠少量或緩慢生產，嚴重妨礙其廣泛應用。現在，新方法便利此納米物料的大幅生產和廣泛應用，如送遞基因或藥物、保護和調節幹細胞等，後者對幹細胞治療、幹細胞組織工程應用和科學研究至為重要。此項研究成果已於著名科學期刊《自然通訊》發表。

A research team led by Prof. Bian Liming of the Department of Biomedical Engineering developed a novel approach to preparing single-chain nanomaterial which boasts an over 20-fold increase in efficiency over traditional methods. The ability to precisely control the structure and the functions of molecular-level designs as in synthetic materials means much to researchers, because they are crucial to regulating the properties and functions of the last at various scales. Traditionally, single-chain polymeric nanoparticles or nano-gels can only be produced in limited yield, which severely hinders the wide application of such nano-objects. By dramatically easing their production, the nanomaterials can now be produced on a large scale, enabling their use in gene or drug delivery, protection of stem cells and regulation of stem cells behaviour, which are of great significance in stem cell therapy, stem cell tissue engineering application and scientific research. This influential biomedical study was published in *Nature Communications*.

## 中大（深圳）收生報捷
## CUHK (SZ) Harvests the Cream of the Crop

中大（深圳）今年在全國二十五個省市和自治區錄取一千二百三十位本科生，當中五百五十七位透過綜合評價辦法入讀，三十七位為外語類保送生。中大深圳分校連續四年成為廣東省院校中錄取分數最高的大學，文科的最低入學成績為六百一十八分，超越一本線七十二分；理科最低分數為六百三十六分，超越一本線一百四十一分。經管學院和理工學院合辦、提供量化金融和金融科技主修的金融工程課程為本年度最受歡迎科目。

This year, CUHK (SZ) admitted 1,230 undergraduate students from 25 provinces, municipalities and autonomous regions in mainland China, among which 557 was recruited via the comprehensive evaluation system, and 37 under the auspices of the foreign language studies student recommendation policy. With the highest admission scores among universities in Guangdong for four years running, the Shenzhen campus saw the lowest score for arts subjects in Gaokao at 618, surpassing the entry threshold for key universities by 72 marks. For science subjects, the admission score was 636 at its lowest, with 141 marks above the said threshold. This year, the University's most popular programme resided in Financial Engineering, a joint programme by School of Management and Economics and School of Science and Engineering offering concentrations in Quantitative Finance and FinTech.

# 宣布事項 / ANNOUNCEMENTS

## 學院及研究院人事任命
## Faculties and Graduate School Appointments

| 新任 New Appointment | 姓名 Name | 任期 Appointment Period |
|---|---|---|
| 文學院院長 Dean of the Faculty of Arts | 唐小兵教授 Prof. Tang Xiaobing Max | 2.9.2019 – 1.9.2024 |
| 研究院院長 Dean of the Graduate School | 陳德章教授 Prof. Anthony Tak Cheung Chan | 1.9.2019 – 31.8.2022 |
| 法律學院院長 Dean of the Faculty of Law | 鄔楓教授 Prof. Lutz-Christian Wolff | 30.9.2019 – 29.9.2024 |

## 2019至20年度大中華法律史研討會系列
## Greater China Legal History Seminar Series 2019–20

| 日期 Date (12:30–2:00 pm) | 題目 / 主講 Topics / Speakers |
|---|---|
| 20.9.2019 | **Mutilating Corporal Punishments and Theories of Punishment in Traditional Chinese Legal Thought**<br>• Prof. Norman P. Ho, Peking University School of Translation Law |
| 25.10.2019 | **The Evolution of the Small House Policy in Hong Kong's New Territories**<br>• Mr. Malcolm Merry, Barrister |
| 22.11.2019 | **The PRC's Engagement with Public International Law in its Historical Context**<br>• Prof. Ryan Mitchell, Assistant Professor, Faculty of Law, CUHK |
| 10.1.2020 | **Law and Slavery in the South China Sea**<br>• Prof. Stuart M. McManus, Assistant Professor, Department of History, CUHK |
| 28.2.2020 | **From Matriarch to Mediator: The Roots of Hong Kong Mediation Practice**<br>• Ms. Sala Sihombing, Director, Conflict Change Consulting Limited |
| 20.3.2020 | **The Origins of Hong Kong's Basic Law**<br>• Prof. Albert Chen Hung-yee, Cheng Chan Lan Yue Professor of Constitutional Law, The University of Hong Kong |

所有研討會均向公眾開放，於中環美國銀行大廈二樓中大法律學院研究生部舉行。

All seminars are open to the public and held at the CUHK Graduate Law Centre, 2/F, Bank of America Tower, Central.

## 為社會植苗：從容閱讀生命倫理
## Leisure Reading in Bioethics: A Public Initiative


中大生命倫理學中心的工作近年延伸至推廣通識教育，包括為就讀高中的年輕讀者設計課外讀物。本港積極推動創新科技發展，不時牽涉科學、醫學及法律問題，並且引起社會上道德倫理的爭論。有見及此，中心策劃生命倫理專題叢書，頭炮為今年書展面世的《生命倫理專題：人工生殖科技（上）》，從多角度探討人工生殖科技，如匿名捐贈精子與卵子及代孕等倫理議題。

The CUHK Centre for Bioethics adopts a non-traditional teaching approach to addressing the unmet learning needs in bioethics under the liberal studies curricula in secondary schools. It launches an educational initiative to publish a series of leisure readings to promote public interest in various topics. As Hong Kong is pressing ahead with the development of innovative technology, it is foreseeable that important and controversial ethical, legal and social issues may arise. In this year's Hong Kong Book Fair, the Centre published the first book in the series titled *Bioethics Themed Series: Assisted Reproductive Technologies*, exploring ethical issues such as anonymous gametes donation and surrogacy.

## 公積金計劃投資回報成績
## Investment Returns of Staff Superannuation Scheme

| 基金 Fund | 7.2019 | | 1.8.2018 – 31.7.2019 | |
|---|---|---|---|---|
| | 未經審核數據 Unaudited | 指標回報 Benchmark Return | 未經審核數據 Unaudited | 指標回報 Benchmark Return |
| 增長 Growth | 0.26% | –0.28% | 1.89% | 2.24% |
| 平衡 Balanced | 0.48% | –0.20% | 2.31% | 3.21% |
| 穩定 Stable | –0.20% | –0.28% | 2.72% | 4.43% |
| 香港股票 HK Equity | –1.61% | –1.83% | –2.41% | –0.94% |
| 香港指數 HK Index-linked | –2.27% | –2.29% | 0.45% | 0.65% |
| A50中國指數 A50 China Tracker | 0.91% | 1.16% | 15.50% | 17.92% |
| 港元銀行存款 HKD Bank Deposit | 0.39% | 0.09% | 2.10% | 0.91% |
| 美元銀行存款 USD Bank Deposit* | 0.42% | 0.30% | 2.50% | 0.92% |
| 澳元銀行存款 AUD Bank Deposit* | –1.48% | –1.52% | –5.48% | –6.77% |
| 歐元銀行存款 EUR Bank Deposit* | –2.05% | –2.04% | –5.16% | –5.07% |
| 人民幣銀行存款 RMB Bank Deposit* | 0.16% | 0.06% | 1.16% | 0.32% |

強積金數據請參閱：
*www.cuhk.edu.hk/fno/chi/public/payroll_benefits/mpf.html*

For MPF Scheme performance, please refer to:
*www.cuhk.edu.hk/fno/eng/public/payroll_benefits/mpf.html*

* 實際與指標回報已包括有關期間內之匯率變動
Both actual and benchmark returns include foreign currency exchange difference for the month

雅 共 賞 / ARTICULATION

# 閃閃發亮的古代女子
# Our Fair Ladies

（局部）

快要開學了，家有小孩的在職媽媽想必無比期待。現代女性生活之忙碌與多姿多彩我們多有體會，不過説到古代女性，除了電視電影中添上不少想像成分的角色，大眾認知中的她們大概可以用溫柔和順卻面目模糊來形容。其實古代和現代一樣，都有很多閃閃發亮的奇女子。畫下文物館藏這卷《蝴蝶圖》的文俶即是一例。

大部分在歷史中留下痕跡的女子，不是有顯赫的父兄夫婿兒子，就是得益於才子名士的傳揚讚譽，文俶也不例外。她是吳門領袖文徵明的玄孫女，嫁予治印家趙宧光之子趙均為妻。據錢謙益為趙均所寫墓誌銘，可知文俶明詩習禮，善於寫生花蝶蟲草。她的才華除了吸引許多女性向其學畫之外，因其畫作屢被搶購，相信也為她的家庭帶來可觀收入。例如現藏臺北國家圖書館的《金石昆蟲草木狀》畫成後就不斷有求觀者造訪趙均與文俶隱居的寒山，最終由張鳳翼之侄張方耳以千金購得。

這卷《蝴蝶圖》畫法與《金石昆蟲草木狀》相似，設色濃重豔麗，細節與輪廓線勾描清晰，亦是文俶作品的傳世佳例。畫卷前後共留有七方清宮收藏印，據考直至民國時期為瀏陽李鴻球所得前一直藏於清宮。卷中有工筆畫出的鴨拓草、石竹、萱花、大濱菊與竹枝，也有以沒骨寫成的各式野草與紫菊。值得一提的是，空中翩翩飛舞的蝴蝶狀寫入微，甚至能辨認出是尖鈎粉蝶、東亞豆粉蝶、美眼蛺蝶、連紋黛眼蝶等品種，反映文俶堅實的寫生功力。

文俶之外，明代秦淮八艷之一的馬湘蘭、詩畫兼擅，更通醫術劍法的吳規臣、寫下「問襟期，原不讓男兒，天生錯」之句的廣東才女吳尚熹等古代女性畫家無疑都是有故事的人。在文物館即將舉行的展覽《北山汲古：中國繪畫》中，「玉臺妙墨」的單元將展出十一位古代女性畫家的作品。歡迎大家於9月21日至12月15日前來參觀，走近她們充滿靈光的藝術世界。

*Heidi Wong*

康 健 型 格 / HEALTH MATTERS

# 棟篤幹
# Sitting is the New Smoking

If this marks the first time you've heard this, consider it your initiation into the ever-expanding community of people who have grown weary of taking a seat. While the title quip may be an exaggerated appraisal, more and more cubicle-bound personnel are taking a stand—literally—towards a more health-conscious lifestyle.

Odds are you've taken notice. Have you ever seen *that one person* who insists on standing up to work, as if to grandstand their health-conscious lifestyle? Maybe that health nut is onto something; there are no shortage of studies documenting the correlation between sitting and negative health consequences. With the advent of technology and everyday conveniences, 'sedentary' has never been a more fitting lifestyle description. Silly as it may seem to work upright, a standing desk may be just what the doctor ordered.

Often we dissociate lifestyle from work, viewing the two as disparate realms. The division has its merits: it helps us leave work at work, leave home at home, and avoid the mixture of business and pleasure. Yet, our own well-being blurs the work-lifestyle demarcation that many of us so vehemently adhere to. Each of us carries our health back and forth between the office and the dinner table, between research meetings and family barbecues. Each day, how we feel dictates the fullness with which we can live our lives and the productivity of our workday. Sitting down interminably erodes our health and dampens productivity, whether we know it or not.

A slew of ailments can be sourced to overextended hours (or years) of sitting down. Each time we sit, our hip flexors shorten and can lose flexibility over time. Remaining seated for long hours, day in day out, places our hip in constant flexion. Very little hip extension occurs during a seated workday, ultimately shortening the involved tendons and impinging upon mobility. If neglected, posture may suffer—not to mention an increased risk of obesity, back pain, inflammation, lack of mobility, and joint issues.

I started using a standing desk a few months ago here at CUHK. I do the majority of my writing and editorial work standing up. While there are other factors involved, I believe my productivity is higher when I'm standing as opposed to sitting. My energy levels remain high and it's easier for me to stave off creeping drowsiness while I'm on my feet. In my chair, I often find myself in that lethargic position of resting my head in my hands—this position is wholly impossible while standing upright.

Sitting down incites slouching and can damage our posture, especially in the late afternoons as our energy wanes. With spending a full day in a chair, sometimes I unknowingly found myself slinking deeper and deeper with each passing hour. My shoulders raised well above my ears and my spine resembled a strand of loose spaghetti amid my slouch.

My standing desk has resulted in less time sitting down, thus less time spent slouching in a chair. My back, shoulders, and neck especially have benefitted. The standing desk helps me remain mindful about my posture, allowing me to put in more regular, conscious effort to keep my spine and back straight.

Of course, there are detractors of the standing desk phenomenon (beyond individuals who feel self-conscious when they see people being proactive about their health). While the benefits of sitting for fewer hours remain, studies have also surfaced about the detriments of standing for extended periods of time, with reports of lower limb swelling and decreases in alertness.

CUHK's Director of University Safety, Mr. **Ralph Lee**, expanded upon this: 'We cannot be oblivious to potential health problems instigated by prolonged standing. Apart from the likelihood of developing varicose veins, some studies suggest the load on the spine is higher, causing shrinking of the lumbar spine.'

Further, reports of decreased mental acuity could stem from increases in physical fatigue or discomfort from standing up. For these reasons, a study published in *Ergonomics*, a research journal that focuses on human interaction with products, concluded that a standing desk should be implemented with caution.

Personally, I spend about four hours standing up to work each day and about four hours seated. Some days I'll stand for the entire morning and sit for the entire afternoon. Other days I'll rotate an hour of each at a time. The combinations vary and depend on what you're comfortable with; there isn't an exact prescription.

'Alternating between sitting and standing would be desirable and recommended. After all, too much of anything could be a bad thing,' added Mr. Lee.

A standing desk is one more way to, ultimately, take a stand for a healthier lifestyle.

*Phil Rosen*

## 的矢錄 / REMARKABLES

‘The findings enable the large scale production and translation of single chain polymeric nanomaterials, which could only be produced in limited yield by conventional methods in the past, into a wide array of applications such as biomedicine, catalysis, and biosensing.’

**Prof. Bian Liming**
of the Department of Biomedical Engineering
on his novel method of preparing single chain nanomaterial

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‘What I expect of my children is that they should be righteous, kind, warm-hearted, and cooperative. These qualities are more important than hard knowledge.’

paediatrician **Dr. Emily Hung** on parenting

*p.06*

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「長跑和讀書都可相輔相成。例如實驗証明，老鼠持續探索不同地方，令海馬體變大增加記憶力，亦有研究指出的士司機的海馬體較大，而海馬體變大有利記憶力，所以經常探索新路段的長跑選手記憶力會較好，對讀書自然有幫助。」

心理學系
**周漢聶**
談如何「兩棲」於長跑與讀書
（《香港01》，2019年8月17日）

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*‘Painting and surgery share many parallels. Both require meticulous planning and breaking down large problems into a series of smaller, achievable issues.’*

**Dr. Randolph Wong**
accomplished cardiothoracic surgeon, researcher, academic and artist

*p.04*

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*‘I look forward to working with the outstanding teachers and experienced administrators of the Graduate School to contribute to CUHK’s graduate teaching and academic research development and bring forth more talent for society.’*

**Prof. Anthony Tak Cheung Chan**
newly appointed Dean of the Graduate School

*p.08*

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「文學院擁有一眾出色的教師、學者及研究員，不少更為世界知名的學者。我期待與這支優秀的團隊合作，為本地、亞洲以至全世界人文學科之間的交流及跨學科研究作出貢獻。」

新任文學院院長
**唐小兵教授**

*p.08*

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*‘It’s almost like we’ve only turned the first 10 pages of the dictionary, and what we know so far could all be wrong.’*

**Prof. Nelson Tang**
of the Department of Chemical Pathology
cautions on the use of genetic testing to
determine genealogy and predict disease

(Nan-Hie In, ‘DNA testing to check for risk of diseases such as cancer, Alzheimer’s: a satisfied customer, worried doctors’, *SCMP.com*, 24 August 2019)