

NYCU'S TAIWAN AI
UNIVERSITY

NVIDIA · 陽明交大聯合創新中心 以 NVIDIA 資源 攜手提升 AI 教學、技術研發、應用與新創發展

文 / 杜懿洵

輝達 (NVIDIA) 創辦人兼執行長黃仁勳於今年六月的訪台行程中，除了參與 COMPUTEX 展，更公佈了在台灣成立 AI 研發中心，與台灣廠商共同進行 AI 應用開發，以及與台灣頂尖大學洽談 AI University 的合作計畫，短短數天將台灣 AI 熱潮帶動至最高點！

NVIDIA 與台清交、中原大學共同合作 AI University

根據經濟部之資料，早在 2021 年，技術處便已核定通過輝達「人工智慧創新研發中心計畫」，總計共約 243 億元之計畫，經濟部補助 67 億元，輝達自籌經費 176 億元。依據此一計畫，輝達要在台灣成立 AI 研發中心，聘用 1000 人的研發團隊，並建置運算平台以供給台灣 AI 研發中心使用，以及開放部分算力給國內的學研機構、合作夥伴或新創業者等。除此之外，計畫內容還包括培育 AI 人才，並與台灣頂尖大學洽談 AI University 的合作計畫；而黃仁勳此行於台大的演講中，也公布了合作的 17 所公私立大學，其中，包含台大、清大、陽明交大與中原四所大學，皆與已輝達展開在 AI University 的合作。

台大校長陳文章表示，台大已和輝達成立 AI University 中心，將推動 AI 融入教學、研究、與創業三個方面；除了在教學上會培訓 AI 教師，讓每個學院的課程都可融入 AI 之外，還會進行

AI 各領域方面的研究，並同時藉由外界資源，鼓勵師生運用 AI 技術創業。清大則是成立「清華與 NVIDIA 聯合創新中心」，進行 AI 教育與 AI 醫療領域發展。至於中原，則是與輝達簽署合作備忘錄，成立「NVIDIA- 中原大學 AI 應用發展聯合服務中心」，並投入 1600 萬元建置人工智慧設備、優化相應空間，並根據各學院的特色發展，推出智慧創新課程與協作教學模式；截至今年三月，中原已有三位老師取得 NVIDIA DLI (Deep Learning Institute) 深度學習師資證照。

NYCU Taiwan AI University 與 NVIDIA 在 AI 教學、研究與新創孵化攜手合作

至於國立陽明交通大學，則早在 2022 年底，便與輝達合作成立校級研究中心「NVIDIA · 陽明交大聯合創新中心」(NVIDIA-NYCU Innovation Center)，具體目標為：(1) 借用 NVIDIA 資源提升 AI 教育與實作經驗、(2) 加速先進 AI 技術研究、(3) 加速 AI 應用技術開發、(4) 促進 AI 新創公司的成立與發展，並由擅長機器人與人工智慧的資工系教授曾煜棋帶領，目前已有深度學習、電路設計等六個研究案正在進行。

而與輝達合作的 NYCU Taiwan AI University，則以替 AI 技能提升奠定基礎為主，並據此設立「Graduate Programs」、

Collaboration」。

Graduate Programs 強力招募 DLI Teaching Kits 與 University Ambassador

Graduate Programs 的課程以 Machine Learning, Computer Vision, NLP 以及產業特定課程為主，並針對 NVIDIA 的 Deep Learning Institute (DLI) 招募老師申請 Ambassador Program 及更多師生使用該機構提供的 Teaching Kits。輝達的 DLI 除了有隨時隨地能進行自學式的線上課程之外，也提供由 DLI 認證之講師所主持的遠距工作坊，此外，在學習中還能使用雲端 GPU 加速伺服器，以及在各種技術和領域中建立並部署 end-to-end project，結束課程之後，更能獲得 NVIDIA DLI 證書，認證專業領域能力。

NVIDIA · 陽明交大聯合創新中心表示，凡具備大學教育工作資格者，皆可以下載涵蓋加速運算、深度學習和機器人領域等課程教材，教學套件除了包含講義資料、GPU 雲端資源、自學進度的 DLI 課程使用權限等之外，課程教材還包括課程投影片、課程影片、實作實驗室習題 / 解答、測驗 / 考試題目集 / 解答、紙本和電子書籍、免費 DLI 線上課程 / 證書機會、免費 AWS 雲端額度、以及包含整合式 DLI 線上課程的授課大綱。目前本校已有五位教授成功申請 Teaching Kits，分別為申請機器學習與資料科學領域的機械工程學系鄭雲謙副教授、科技法律研究所李昇昇助理教授、申請機器學習領域的醫務管理研究所陳翎翎助理教授，以及申請機器學習與深度學習領域的資訊工程學系林政寬副教授、電機工程學系 Stefano Rini 助理教授。

至於 Ambassador Program，目前全球已有數百所大學擁有經認證的 DLI 大使，歡迎陽明交大的教職員與研究人員踴躍申請，不但可以免費獲得認證，更能向學生進行 DLI 工作坊之教授；而本校除了資訊工程學系謝秉均副教已獲得認證之外，還有智慧計算與科技研究所陳建志副教授，與醫務管理研究所陳翎翎助理教授兩位提出申請。

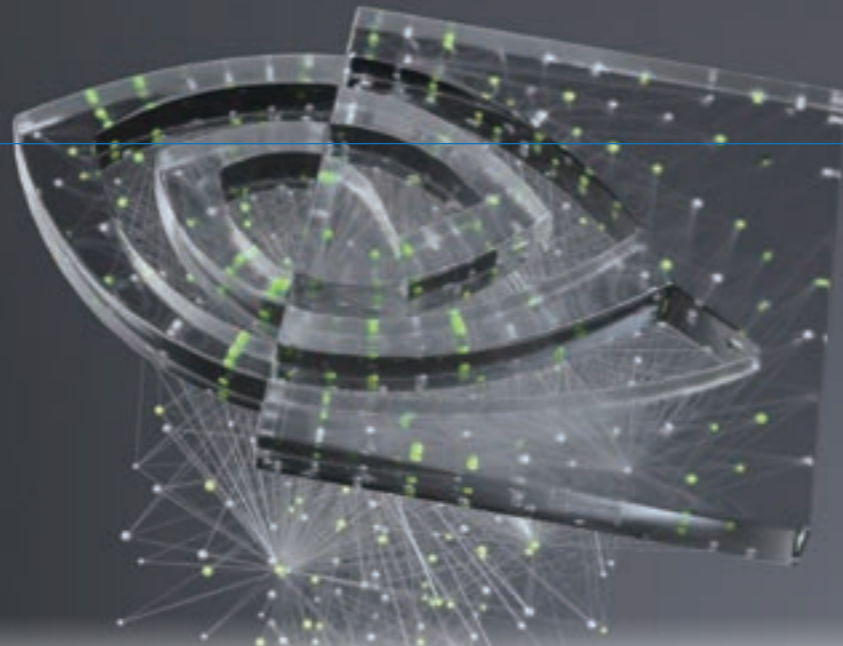
Post Graduate Programs 期待更多教授加入 Advanced Research Projects

而在「Post Graduate Programs」部分，主要分為「運用 NVIDIA 之研究能量，結合 AI 與加速運算技術，所提升之國家研究與學術成就」與「應用研究加速計畫 (Applied Research Accelerated Program)」兩部分；前者目前已有曾煜棋與易志偉教授的「應用 AI 技術於羽球戰情收集與戰術分析計畫」，後者則有楊智傑教授的腦科學醫療聯邦式學習計畫、林彥宇教授的「Deep Cross-domain Learning for Computer Vision Applications Grant Proposal」、邱維辰教授的 Learning Explainable Model and Discovering Hierarchical Concepts、謝秉鈞教授的 Meta RL for Multi-Objective Bayesian Optimization for Circuit Design、李毅郎教授的 Fast Rip-up and Rerouting Convergence in Chip Detailed Routing by RL、前瞻半導體研究所林柏宏教授的 Circuit Schematic to Netlist，以及電子研究所陳柏宏教授的 Development of High Efficiency 48V-to-1V DC-DC Converter Grant Proposal。

Industry Collaboration 招募產學研發新創公司加入 NVIDIA Inception 計畫

而在 Industry Collaboration，主要是希望透過 NVIDIA Inception 計畫來推動 AI 新創發展，共分成三個部分：將 AI 大學的新創團隊培育進入 NVIDIA Inception 計畫、推動以製造業、醫療保健及自動駕駛領域為重點的產學聯合研究，以及推動產學界共同參與的駭客松和密集訓練營，在此部分，目前有盧鴻興教授的人工智能輔助診所的統計學習醫療計畫參與 Incubator Program。

此外，在 NVIDIA 與華碩支持下，本校應用藝術研究所 NYCU IAA 也能使用 NVIDIA Studio 平台來進行數位創作。陽明交大很榮幸能參與 NVIDIA AI University 的計畫，除了感謝 NVIDIA 所提供的合作與資源，更期待未來能與全台及全世界夥伴共同開拓 AI 時代的願景。



NYCU'S TAIWAN AI UNIVERSITY

NVIDIA–NYCU Innovation Center

In collaboration with NVIDIA, NYCU advances AI education, technology R&D, applications, and innovation

During his visit to Taiwan in June, NVIDIA founder and CEO Jensen Huang not only joined COMPUTEX but also revealed plans to establish an AI R&D center in Taiwan. The center will collaborate with local industries on AI application development and work with leading Taiwanese universities on the AI University initiative. In just a few days, Huang's visit ignited an unprecedented surge in Taiwan's AI landscape!

NVIDIA partners with National Taiwan University, National Tsing Hua University, National Yang Ming Chiao Tung University, and Chung Yuan Christian University to establish AI University.

According to the Ministry of Economic Affairs, as early as 2021, the Department of Industrial Technology approved NVIDIA's "AI Innovation R&D Center Project," a plan worth approximately 24.3 billion NTD. The Ministry provided a subsidy of 6.7 billion NTD while NVIDIA funded 17.6 billion NTD. As part of this project, NVIDIA plans to establish an AI R&D center in Taiwan, employing a team of 1,000 researchers, and develop a computing platform for the Taiwan AI R&D center. The project will also offer partial computing power to domestic academic and research institutions, as well as partners and startups. Additionally, the project includes fostering AI talent and exploring collaboration with Taiwan's top universities on the AI University initiative. During his speech at National Taiwan University, Huang announced the 17 public and private universities involved in the project, including National Taiwan University (NTU), National Tsing Hua University (NTHU), National Yang Ming Chiao Tung University (NYCU), and Chung Yuan Christian University (CYCU), all of which have partnered with NVIDIA to establish AI University.

The President of National Taiwan University Wen-Chang Chen announced that NTU has partnered

with NVIDIA to establish the AI University Center, to integrate AI into teaching, research, and entrepreneurship. The initiative will train AI instructors to incorporate AI into curricula across all departments and foster research in various AI fields. Additionally, it will encourage faculty and students to leverage AI technology for entrepreneurial ventures, supported by external resources. Meanwhile, National Tsing Hua University has launched the "Tsing Hua-NVIDIA Joint Innovation Center" to focus on AI education and healthcare applications. As for Chung Yuan Christian University, it has signed a memorandum of understanding with NVIDIA to create the "NVIDIA-Chung Yuan Christian University AI Application Development Joint Service Center." CYCU invests 16 million NTD to develop AI infrastructure, optimize related spaces, and offer smart innovation courses and collaborative teaching models tailored to each department's specialties. By March 2024, three CYCU faculty members had obtained the NVIDIA Deep Learning Institute (DLI) deep learning instructor certification.

NYCU Taiwan AI University and NVIDIA Collaborate in AI Education, Research, and Startup Incubation

In late 2022, National Yang Ming Chiao Tung University partnered with NVIDIA to establish the "NVIDIA-NYCU Innovation Center," a university-level research hub. The center aims to: (1) leverage NVIDIA's resources to enhance AI education and practical experience, (2) accelerate research in cutting-edge AI technologies, (3) drive the development of AI application solutions, and (4) foster the creation and growth of AI startups. The center is led by Professor Yu-Chee Tseng from the Department of Computer Science, an expert in robotics and artificial intelligence. Just now, six research projects, including those focused on deep learning and circuit design, have proceeded.

In partnership with NVIDIA, NYCU Taiwan AI University is dedicated to building a strong foundation for advancing AI skills. To support this goal, the university has established "Graduate Programs," "Postgraduate Programs," and "Industry Collaboration" initiatives.

Graduate Programs Actively Recruiting DLI Teaching Kits Users and University Ambassadors

The Graduate Programs offer courses including Machine Learning, Computer Vision, Natural Language Processing (NLP), and industry-specific subjects. The programs actively seek instructors to join the Ambassador Program, and encourage students and faculty to utilize the Teaching Kits provided by NVIDIA's Deep Learning Institute (DLI). In addition to flexible, self-paced online courses that can be accessed anytime and anywhere, DLI offers remote workshops led by certified instructors. Participants have the opportunity to use cloud-based GPU-accelerated servers as well as create and deploy end-to-end projects across various technologies and fields. Upon completing the courses, learners receive the NVIDIA DLI certificate, a recognized credential that validates their professional expertise.

The NVIDIA-NYCU Innovation Center announces that individuals with higher education teaching qualifications can access course materials in areas such as accelerated computing, deep learning, and robotics. The comprehensive teaching kits include lecture notes, GPU cloud resources, self-paced access to DLI courses, and more. The kits also feature course slides, instructional videos, lab exercises with solutions, quizzes and exams with answer keys, physical and digital textbooks, free access to DLI online courses and certifications, free AWS cloud credits, and integrated DLI course syllabi. Currently, five professors from NYCU have successfully applied for Teaching Kits. They include Associate Professor Yun-Chien Cheng from the Department of Mechanical Engineering, who is focusing on machine learning and data science; Assistant Professor Jieh-Sheng Lee from the Institute of Technology Law; Assistant Professor Ling Chen from the Institute of Hospital and Health Care Administration, specializing in machine learning; Associate Professor Cheng-Kuan Lin from the Department of Computer Science; and Assistant Professor Stefano Rini from the Department of Electronics and Electrical Engineering, both of whom are concentrating on machine learning and deep learning.

The Ambassador Program currently has certified DLI ambassadors at hundreds of universities worldwide. Faculty and researchers at NYCU are encouraged to apply, as they can receive free certification and the opportunity to teach DLI workshops to students. In addition to Associate Professor Ping-Chun Hsieh from the Department of Computer Science, who is already certified, two other professors have applied:

Associate Professor Jen-Jee Chen from the Institute of Computational Intelligence and Assistant Professor Ling Chen from the Institute of Hospital and Health Care Administration.

Post Graduate Programs Welcome More Professors to Join Advanced Research Projects

The "Post Graduate Programs" are divided into two main sections: "Leveraging NVIDIA's research expertise and integrating AI with accelerated computing technologies to advance the nation's research and academic accomplishments" and the "Applied Research Accelerated Program." The former includes Professors Yu-Chee Tseng and Chih-Wei Yi's project "Application of AI Technology for Badminton Tactical Analysis and Strategy Collection." The latter encompasses several initiatives, including Professor Albert Chih-Chieh Yang's "Neuroscience Medical Federated Learning Program," Professor Yen-Yu Lin's "Deep Cross-domain Learning for Computer Vision Applications Grant Proposal," Professor Wei-Chen Chiu's "Learning Explainable Models and Discovering Hierarchical Concepts," Professor Ping-Chun Hsieh's "Meta RL for Multi-Objective Bayesian Optimization for Circuit Design," Professor Yih-Lang Li's "Fast Rip-up and Rerouting Convergence in Chip Detailed Routing by RL," Professor Po-Hung Lin's "Circuit Schematic to Netlist" from the Institute of Pioneer Semiconductor Innovation, and Professor Po-Hung Chen's "Development of High-Efficiency 48V-to-1V DC-DC Converter Grant Proposal" from the Institute of Electronics.

Industry Collaboration Inviting Industry-Academic R&D Startups to Join the NVIDIA Inception Program

The goal of the Industry Collaboration is to foster the development of AI startups through the NVIDIA Inception Program, which focuses on three main areas: supporting AI startup teams from universities to join the program, advancing industry-academia collaborative research in sectors such as manufacturing, healthcare, and autonomous driving, and organizing hackathons and intensive training camps that engage both industry and academic participants. Currently, Professor Henry Horng-Shing Lu is participating in the Incubator Program with his AI-assisted clinic statistical learning project in healthcare.

Furthermore, with the support of NVIDIA and ASUS, the Institute of Applied Arts at NYCU (NYCU IAA) can utilize the NVIDIA Studio platform for digital creation. NYCU is proud to be part of the NVIDIA AI University program. We deeply appreciate the collaboration and resources provided by NVIDIA and are excited to work with domestic and global partners to help shape the future of AI.