香港浸會大學
HONG KONG BAPTIST UNIVERSITY

Institute for
Innovation and Translation
創新及轉化研究院

ART TECH AT HKBU

Translating Innovation &
Creativity for Impact

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ART TECH

enables us to harness the power of technology to reimagine what's possible in the artistic world.

HONG KONG BAPTIST UNIVERSITY

Hong Kong Baptist University (HKBU) is committed to the pursuit of excellence in education, research and service to the community. As one of Asia's finest institutions of higher learning, HKBU is dedicated to nurturing future generations of civically engaged community members, and it provides them with a broad-based, transdisciplinary and creative education. Its seven faculties/schools offer a wide array of programmes across a diverse range of disciplines, from the arts, business, communication, and social sciences to science and technology, Chinese medicine and sport.

HKBU offers an education and research environment that fosters technological progress with a focus on the human dimensions. At the same time, the University is using technology to push the envelope of human imagination in the arts and cultural sphere. Coupled with our unceasing efforts to achieve breakthroughs in science and Chinese medicine, HKBU strives to contribute to the building of a better world and a more compassionate society.

OUR STRATEGIC CLUSTERS

Art, Culture and Creative Media

Film, Literary Arts, Music, Visual/Media Arts

Data Analytics and AI

Enabler for applications such as journalism, business and finance, science and art

Health, Chinese Medicine and Drug Discovery

Chinese medicine, Chemistry, Microbiology, Ageing, Physical Education

Humanities and Cultures

Philosophy, Literature, Geography, History, Political Science, Communication, Economics, and the like

Institute for
Innovation and Translation
創新及轉化研究院

TRANSLATING INNOVATION & CREATIVITY FOR IMPACT

The Institute for Innovation and Translation (IIT)

at HKBU is dedicated to driving innovations, research and development, technology translation, and applications to enable HKBU to respond to emerging challenges and opportunities globally, nationally, and under the aegis of the Government of the Hong Kong Special Administrative Region of the People's Republic of China's top policy priority on innovation and technology development.

We strive to bridge the gap in technology readiness between academic innovation and industry applications in order to bring HKBU's innovations for the well-being of the society.

IIT comprises

Innovation and Entrepreneurship

Technology Translation

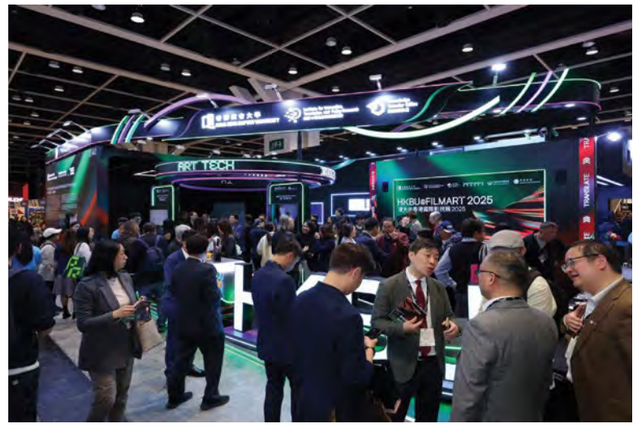
each being instrumental in fostering a vibrant ecosystem at HKBU conducive to technology translation and collaborations.

The all-round business development, scientific, and policy research support will anchor HKBU's robust and sustainable development.

STRATEGIC ALLIANCE AND ENTREPRENEURSHIP

Accelerating Technology Translation and Application

To bridge the gap in technology readiness between academia and industry in technology development, IIT strives to enhance HKBU's innovation capacity and improve our research and technology development capabilities through proactive outreach and engagement with strategic partners and investors. We achieve this by establishing collaborative platforms, engaging stakeholders, facilitating high-impact innovation, and conducting multidisciplinary R&D.



IIT offers support and resources to mature technology and startups of HKBU in realising their potential to generate social, economic, and cultural impacts. To showcase the potential of technology, IIT identifies anchor events in different industries to participate and demonstrate technology applications to industry players and investors.

TECHNOLOGY TRANSLATION

Anchoring Technology Application

IIT offers infrastructure to support HKBU's translational research.

We provide resources and expertise for technology development and demonstration, while we also serve as a training hub to cultivate the next generation of scientists and researchers.

Our aim is to equip them with the necessary skill set and know-how for technology applications. Our flagship translational infrastructures include:

01

Wu Jieh Yee Institute of Translational Chinese Medicine Research (WJY ITCMR)

Located at the Hong Kong Science Park, the primary mission of WJY ITCMR is to become a recognised world-class centre for innovative research in Chinese medicine. Equipped with state-of-the-art research infrastructure, WJY ITCMR supports cutting-edge and cross-disciplinary collaborations with high-quality translational research and deliverables, generating significant regional and global impact in the healthcare industry.

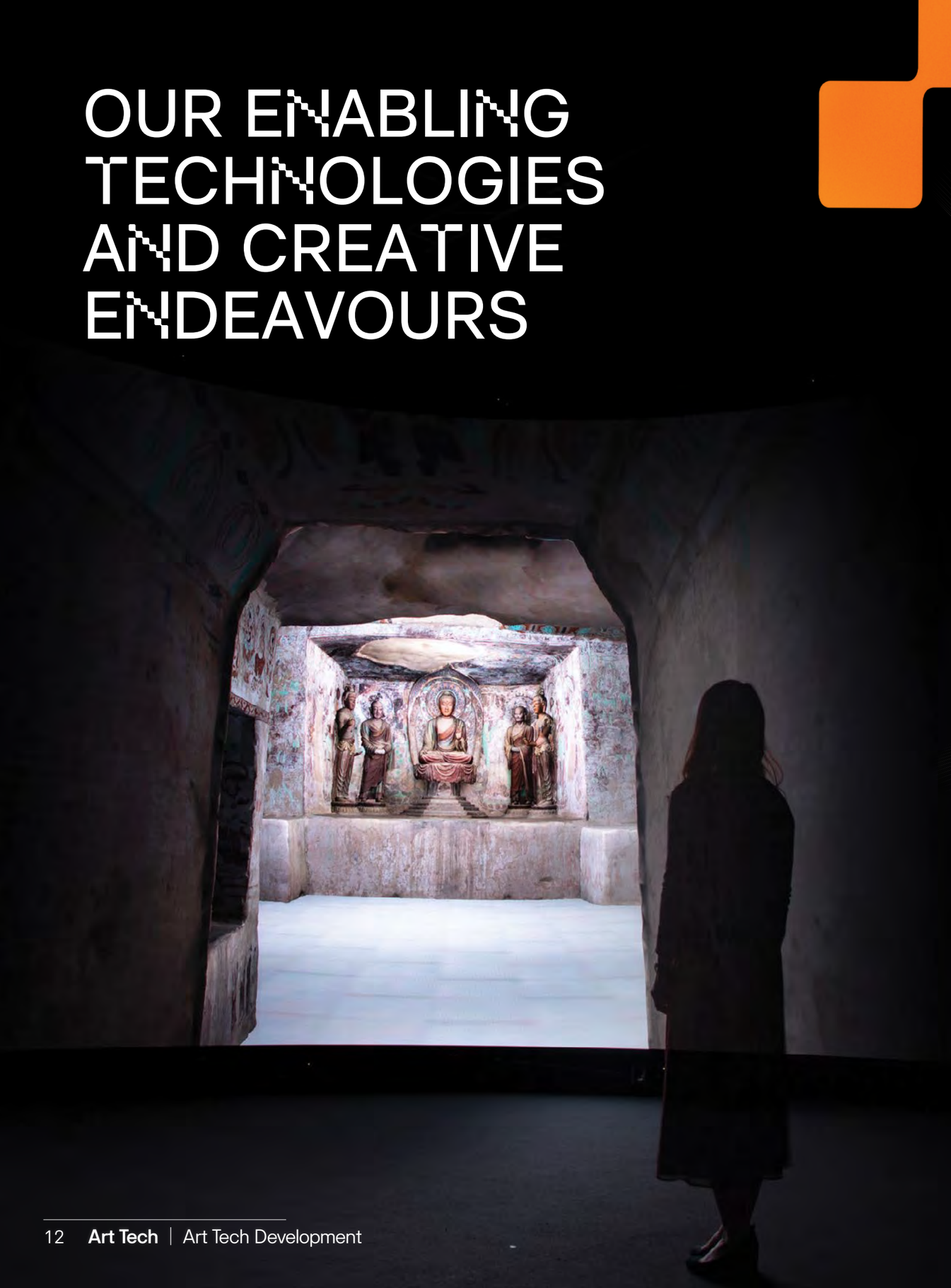
02

CHRYSALIS HKBU Art Tech Incubation Hub

Located at the Jockey Club Creative Arts Centre (JCCAC), CHRYSALIS is dedicated to fostering the incubation of cutting-edge Art Tech projects and entrepreneurial activities by providing a creative environment for our innovators and artists.

We support technology development and streamline the process of translation and demonstration, with the aim to bridge the gap between artistic vision and technological innovation.

OUR ENABLING TECHNOLOGIES AND CREATIVE ENDEAVOURS



Pushing the boundaries of art forms and audience experiences

The synergy between art and technology has the potential to revolutionise the way we create and consume art. As a cradle of creativity, HKBU has always engaged in groundbreaking research and development which can make a difference. Our Art Tech has enabled us to harness the power of technology to reimagine what's possible in the artistic world.

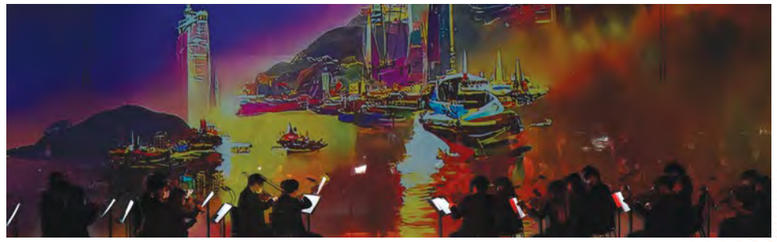
By leveraging our established strengths in both the arts and sciences, HKBU is taking an interdisciplinary approach to transform and advance the arts and culture through Art Tech development. We aim to produce new experiences and creations that can engage and connect with wider audiences so as to drive the public awareness and community engagement on different social issues.

From the application of artificial intelligence in visual arts to the creation of cutting-edge technology, HKBU's pioneering scientists and artists are working hand-in-hand to advance the way humans and machines to co-create art. Our bold Art Tech initiatives are leading the way and showing other institutions, practitioners, and researchers what's possible.

BUILDING PLATFORM TECHNOLOGIES FOR SYMBIOTIC CREATIVITY IN HONG KONG

A pioneering research project with

HK$ 52.8 million granted



A groundbreaking 5-year project aiming to develop a creative Art Tech platform and provide unlimited art content for humans to usher in a new era of Art Tech. With HK$52.8 million research funding from the Research Grants Council in 2021, the multidisciplinary research team is working together for several initiatives including an art data repository, an AI creative algorithm system, a research theatre, a digital art and policy network, and some unique and creative applications.

Under this project, applications in three domain areas will be launched:

01 **the Super AI artist** the world's first "Combined Music and Art Biennale", which will host multidisciplinary musical works and artworks jointly created by humans and AI;

02 **Shared Mind and Empathetic AI** a concert series featuring a three-way collaboration between performers, the audience and machines; and

03 **Symbiotic Opera** a new form of opera that integrates with immersive XR technology, and it will be jointly created by humans and machines in an immersive virtual world.

The project is global and multidisciplinary, featuring artists, AI and Data scientists, media scientists, cognitive scientists, and ethics and art policy scholars from HKBU, Yale University, Cambridge University, City University of Hong Kong, Norwich University of the Arts, Hong Kong University of Science and Technology, Tsinghua University, The University of Hong Kong, University of Kent, SenseTime Group Ltd, and Imperial College London.

PROJECT TEAM

Professor Johnny M Poon
Associate Vice-President
(Interdisciplinary Research)
Dean of the School of Creative Arts
Chair Professor in Creative Arts
Dr. Hung Hin Shiu Endowed
Professor in Music

Professor Yike Guo
Former Vice President
(Research and Development)

Professor Jeffrey Shaw
Chair Professor
Academy of Visual Arts

Professor Eugene Alexander Birman
Associate Director
Internationalisation and
Associate Professor
Academy of Music

Professor Chen Li
Associate Head (Research) and Professor
Department of Computer Science
Professor (Affiliate)
Department of Social Work

Professor Kingsley Ng
Associate Professor
Academy of Visual Arts
Programme Director of BASc (Hons)
in Arts and Technology

Professor Xu Jianliang
Head & Chair Professor
Department of Computer Science

Professor Chen Jie
Associate Professor
Department of Computer Science

Professor Zhou Chang Song
Head and Professor
Department of Physics

and other researchers

TURING AI ORCHESTRA- AN AI-DRIVEN PLATFORM FOR DISRUPTIVE ART PERFORMANCE

It is the world's first AI ensemble which utilise artificial intelligence to create performing arts. By applying state-of-the-art AI technology, the orchestra aims to achieve a new form of symbiotic artistic creation and performance between humans and AI systems.

With three hours of recorded speech data, the AI will transform human speech into any song which retaining the individual's unique voice, tone, and accent. Beyond singing, the AI ensemble is also able to create other forms of performance arts, for instance, it can mimic human movement and dancing patterns to choreograph movement, compose music with the sounds of different instruments, and even create animation simply with text prompters.

It offers an open platform for artists and scientists around the world to collaborate within a dynamic and innovative environment and produce groundbreaking research that will disrupt the world of art.

FUTURE CINEMA SYSTEMS: NEXT-GENERATION ART TECHNOLOGIES

The novel, farsighted Art Tech project with

HK$ 35.4 million ITSP funding

In collaboration with the Cameron Pace Group China, Salon Films (HK) Limited, the École Polytechnique Fédérale de Lausanne (EPFL) in Switzerland and the City University of Hong Kong, HKBU has launched this novel attempt to develop and construct a “Future Cinema System” (FCS). FCS is an integrated system for artists and the creative industries to meet the growing demand for new interactive immersive forms of cultural experience, as well as entertainment and education.

With the construction of the FCS, three integrated technological innovations will be delivered.

01 The **visualisation innovation** comprises a set of immersive, interactive visualisation resources for producing a 360-degree, three-dimensional and truly immersive environment.

02 The **human-computer interaction innovation** contains a set of novel tracking sensing and biometric technologies that can record human conditions, responses and movements.

03 The **co-evolutionary narrative innovation** comprises the software intelligence that will enable the audiovisual manifold to react and respond to the sensory prompts provided by the participants.

The deliverables of the project will first be deployed at selected facilities in Hong Kong, such as the Hong Kong International Airport, M+ Museum and Tai Kwun.

香港國際機場 HONG KONG INTERNATIONAL AIRPORT　M+　大館 TAI KWUN

PROJECT TEAM

Professor Jeffrey Shaw
Chair Professor
Academy of Visual Arts

Professor Jiming Liu
Associate Vice-President (Research Development)
Chair Professor
Department of Computer Science

Professor Roberto Alonso Trillo
Associate Professor
Directed Studies Coordinator
Academy of Music

Professor Wan Renjie
Assistant Professor
Department of Computer Science

Professor Peter Nelson
Associate Director (Teaching and Learning) and
Associate Professor
Academy of Visual Arts

Professor Johnny M Poon
Associate Vice-President (Interdisciplinary Research)
Dean of the School of Creative Arts
Chair Professor in Creative Arts
Dr. Hung Hin Shiu Endowed Professor in Music

Professor Chen Jie
Associate Professor
Department of Computer Science

Professor Liu Yang
Assistant Professor
Department of Computer Science

Professor Chen Li
Associate Head (Research) and Professor
Department of Computer Science
Professor (Affiliate)
Department of Social Work

and other researchers

Learn More

FLY ME THERE

3D Immersive gateway to spectacular cultural heritage sites across Asia

The “Fly Me There” exhibition marks the debut display of a deliverable of the “Future Cinema Systems: Next-Generation Art Technologies” project. It was held at Hong Kong International Airport (HKIA). The exhibition offers visitors an immersive virtual experience of more than 40 cultural heritage sites in eight Asian countries - China, Cambodia, India, Indonesia, Myanmar, Thailand, Turkey and Sri Lanka through high-resolution panoramic lens.

A 360-degree 3D interactive LED cinema with a diameter of 7.6 meters and a height of four meters is featured in the exhibition. The 3D LED screen has a 24 million pixel ultra-high resolution that provides a 12K panoramic ultra-high-definition viewing experience. The cinema showcases the exterior and interior of these cultural heritages, including the Lingyin Temple and Yong Dong Tianhou Temple in China; Ajanta caves in the Aurangabad district and Chetiyagiri Vihara in Sanchi in India; the Istanbul Chora Church and the hot air ballooning in Cappadocia in Turkey.

The exhibition is a showcase of a revolutionary paradigm shift for the cinematic experience. The 360-degree LED cinema amalgamates the technologies of digital film, video games, virtual and augmented reality, to create a new, totally immersive and interactive mode of artistic expression. It also highlights the infinite possibilities that technology creates for the cultural and creative industries and redefines how people connect and interact with precious cultural heritage.

Learn More

PROJECT-IN-CHARGE

Professor Jeffrey Shaw
Chair Professor
Academy of Visual Arts

Professor Sarah Kenderdine
Visiting Professor
Department of Computer Science

WAYNE MCGREGOR: ON THE OTHER EARTH

The world's first post-cinematic choreographic installation

World Premiere at the **19th International Festival of Contemporary Dance** and presented at Venice Immersive ("The Best of"), the extended reality (XR) section of the **82nd Venice International Film Festival**
(Biennale Danza and Biennale Cinema of La Biennale di Venezia 2025)

Joining forces with Studio Wayne McGregor and the Hong Kong Ballet (HKB), HKBU presents the pioneering cultural performance *Wayne McGregor: On The Other Earth*. This world's first post-cinematic choreographic installation is another deliverable of the 'Future Cinema Systems: Next-Generation Art Technologies' project, leveraging the immersive nVis installation.

On The Other Earth refracts, evolves and reimagines dance performance in a startlingly original new form of experience set within a radically immersive panoramic, 360-degree stereoscopic, 12K LED, 26-million-pixel nVis screen, where 3D imagery is experienced within an enveloping, large-scale cylindrical architecture. Combining dance – connecting in close contact with the hyperreal dancers of Company Wayne McGregor and HKB, choreography, digital imaging, spatialised sound, and artificial intelligence, Professor Sir Wayne McGregor transports the audiences in a thought-provoking, otherworldly encounter.

PROJECT-IN-CHARGE

Professor Jeffrey Shaw
Chair Professor
Academy of Visual Arts

Professor Sarah Kenderdine
Visiting Professor
Department of Computer Science

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Full Credits: Refer to the QR code
On The Other Earth Image: *Wayne McGregor: On The Other Earth*, Company Wayne McGregor 2025
On The Other Earth Photo Credit: Ravi Deepres and Luke Unsworth

A Revolutionary Global Voyage in Artistic Innovation & Knowledge Transfer

Hong Kong's vibrant cultural leadership in advancing global artistic innovation through this captivating cross-cultural and cross-sectoral collaboration was celebrated at the Hong Kong reception **Pulse of the Pearl: Transcending Avant-garde with Technology and Knowledge Transfer** held at the SMAC San Marco Art Centre, Venice.

Esteemed speakers Professor Sir Wayne McGregor, Artistic Director of Biennale Danza; Professor Terence Lau, Interim Chief Innovation Officer at HKBU; Mr Septime Webre, HKB Artistic Director and Professor Jeffrey Shaw led the audience in an inspiring discussion on how dance, art tech and knowledge transfer will shape the future of performance. They also explored Hong Kong's role in international partnerships and the city's potential to contribute to global arts and culture.

Affiliated University of the Biennale Architettura 2025

In the education session **Pioneering Art Tech: New Frontiers in Interdisciplinary Education and Media Production**, Professor Andreas Kratky, Director of the Academy of Visual Arts, and Professor Shin Dong Kim, Professor of the Academy of Film, shared their expert insights on *"Merging Tradition and Future: Interdisciplinary Research and Education in Art and Technology"* and *"Changing Landscape of Media Production in the Time of AI Technology"*.

Learn More

BRINGING THE PALACE MUSEUM'S TREASURES TO LIFE

Revitalising Hong Kong Palace Museum's artwork with technology

This project with the Hong Kong Palace Museum (HKPM) offers innovative, immersive art experiences that allow the public to better appreciate and understand historical artifacts. The project uses new media techniques to interpret historical works from the past and provides contemporary aesthetic experiences. Each artwork is a dialogue with the historical artifacts on show in the HKPM.

The project includes several installations, including the Interactive Panorama of Horses, Eight Interactive Horses, and Lenticular Procession of Tribute Horses. For instance, the "Eight Interactive Horses" installation is based on Giuseppe Castiglione's sketch and painting and uses sensors to detect the location of visitors to influence the behaviour of its motion-captured and animated line-drawn horses. The Interactive Panorama of Horses is a special commission for the Hong Kong Palace Museum's opening exhibition and offers an innovative, immersive art experience.

This project demonstrated the potential of new media art for innovative design and new media techniques to offer contemporary aesthetic experiences. The project represents a significant contribution to the field of art and culture, and it showcases the intersection of technology and creativity.

PROJECT-IN-CHARGE

Professor Jeffrey Shaw
Chair Professor
Academy of Visual Arts

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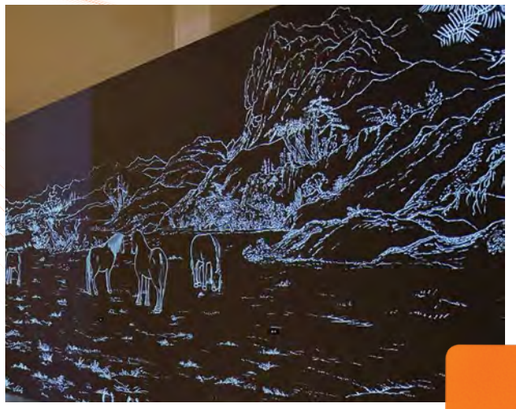


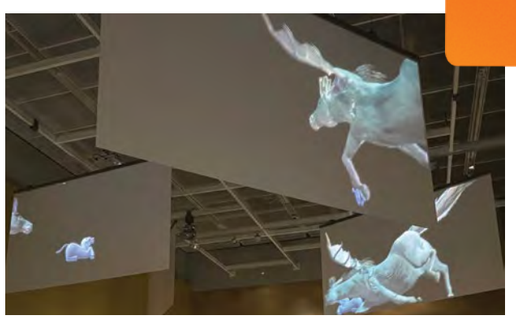


Photo courtesy of
Jeffrey Shaw/Hong Kong Palace Museum

BAROQUE EXHIBITION

The immersive journey to the Baroque era involving art, music and machine learning

The HKBU team has curated a programme of music and soundscapes for selected paintings by pairing the painting with playlist of music from the Baroque period, which took visitors on an immersive journey to the Baroque era, an artistic period that flourished in Europe in the 17th century.

In order to match the theme and the rich details of this painting, Professor Johnny Poon and his team developed machine learning algorithms to generate models of singing voices in addition to the human vocals. For instance, the team has created the Palestrina's motet with a version of the soprano and alto parts performed by female vocalists while the tenor and bass parts were generated by artificial intelligence. By merging Baroque music with modern technology, the innovative performance of the motet symbolises a dialogue between humans and celestial beings.

Building upon the idea of encapsulating the Baroque spirit, Professor Poon's team also designed immersive soundscapes with the latest audio technologies and artificial intelligence to create a sensory experience that sparks the visitors' imagination on the Baroque spirit. For example, to echo the rich and vibrant colours setting of the painting "Flowers and Fruit with a Woman Picking Grapes", the team added an additional layer to the narrative by blending Baroque music with the sounds drawn from nature, including birdsong and the gentle sound of the wind.

PROJECT-IN-CHARGE

Professor Johnny M Poon
Associate Vice-President (Interdisciplinary Research)
Dean of the School of Creative Arts
Chair Professor in Creative Arts
Dr. Hung Hin Shiu Endowed Professor in Music

Learn More

È VERO, È VERO, È VERO

A dialogue across time and space

Art Tech application is not limited to adopting artificial intelligence but can also associate with multimedia elements. Kingsley believes that artists can inject new energy into art by integrating an appropriate level of technology. To do so, artists must possess discerning taste in art with multi-dimensional thinking and analytical skills.

As inspired by the Baroque artist Artemisia Gentileschi's autobiographical painting Judith and Her Maidservant with the Head of Holofernes, Kingsley setup his installation through an interplay of light and sound which invites audience to have a dialogue with Baroque artists across time and space.

The installation, "Èvero, èvero, èvero" (in English: 'It's true, it's true, it's true'), came with dramatic contrasts of light and shadow to express the impact of modern science on Baroque art. Such installation added another dimension to art appreciation and offer the audience an immersive art experience.

PROJECT-IN-CHARGE

Professor Kingsley Ng
Associate Professor
Academy of Visual Arts
Programme Director of BASc (Hons)
in Arts and Technology

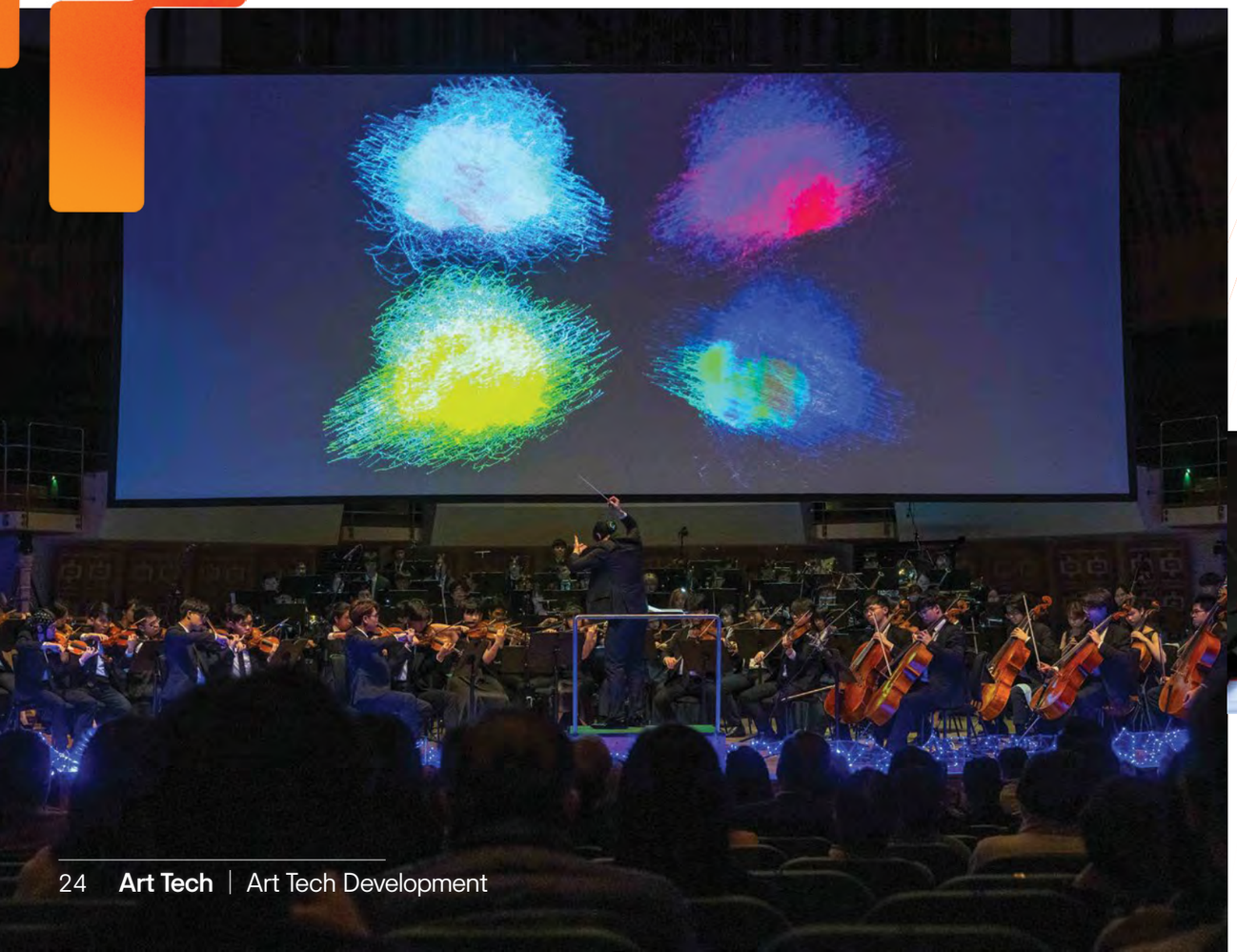
Learn More

HKBU GALA CONCERTS

Groundbreaking collaborations between humans and machines

HKBU Gala Concert is an annual premier event that invites audience on a musical odyssey through classical virtuosity, choral harmony, technological innovation, and emotional resonance. Each concert showcases the exceptional synergy of the creative prowess of HKBU talents and groundbreaking innovations in artificial intelligence (AI) and multimedia integration, pioneering landscapes in performing art creativity. The performances transcend concerts and push the boundaries of artistic expression.

Established by HKBU in 2022, Turing AI Orchestra (TAIO) is the world's first artificial intelligence (AI) ensemble which uses state-of-the-art AI technology to achieve a new form of symbiotic artistic creation and performance between humans and AI systems. TAIO offers an open platform for artists and scientists around the world to collaborate within a dynamic and innovative environment, and it will produce groundbreaking research that will disrupt the world of art. It marks one of the milestones of HKBU's unwavering commitment to broadening the scope of human-machine symbiosis.



HKBU Gala Concert promises to explore the endless possibilities in art co-creation by human creativity and AI innovation. Audience was taken on a musically sublime journey with AI and other advanced technologies. HKBU computer scientists made use of cutting-edge system for video and image restoration that employs the latest AI models to breathe new life into the classic film. By translating the movements of the Yao dancers into motion data, a machine learning model was created to train the AI dancers to synchronise their movements to the music. Apart from AI-generated virtual dancers, AI virtual choir and AI media artist were harmoniously incorporated into the musical performance, achieving a seamless fusion of diverse art components.

Technology also empowers musicians and artists to go beyond the traditional forms and interact with the audience in brand new ways. Leading technology was deployed to create a singular musical experience for the audience by capturing the brain activity of the performers and translating these brainwave patterns into fluid images via AI. These subtle yet innovative integrations enhance the sensory and emotional impact of art performance.

With AI-generated components and real-time visual storytelling intersecting with classical and contemporary compositions, audience are treated to a rich tapestry of sound and visuals. Poised to redefine the boundaries of what art could be, HKBU Gala Concert stands as a prime example which illustrates the promising potentials of Art Tech for future art projects.

Learn More

PROJECT TEAM

Professor Johnny M Poon
Associate Vice-President
(Interdisciplinary Research)
Dean of the School of Creative Arts
Chair Professor in Creative Arts
Dr. Hung Hin Shiu Endowed
Professor in Music

Professor Chen Jie
Associate Professor
Department of Computer Science

Professor Wan Renjie
Assistant Professor
Department of Computer Science

Also featuring other cross-disciplinary experts

MOTIONGPT X BUVATAR

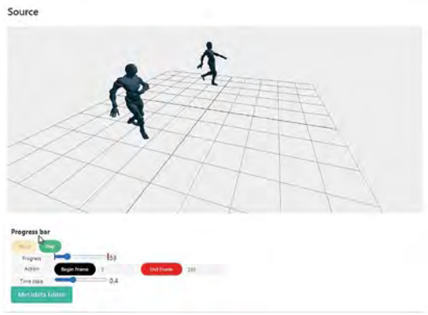
Transforming movie making with artificial intelligence

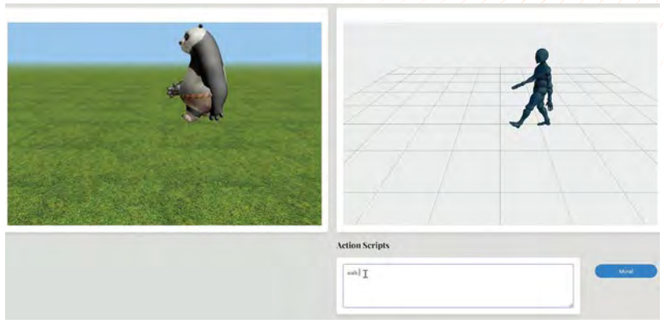
Step into the future of movie making with groundbreaking artificial intelligence technologies poised to revolutionise the industry. Professor Chen Jie's cutting-edge research and innovation suggest that AI solutions can completely overhaul the traditional methods of movie creation.

"MotionGPT" is an artificial intelligence solution that comprehensively understands motion concepts, attributes, and even personalises motion styles. This cross-context motion foundation model combines motion kinematic attributes with natural language elements, allowing for explicit interpretation and re-editing through their Labanotation Interface. This marks the end of inflexible motion generation and welcomes a new era of creative possibilities.

Furthermore, the "BUVATAR" project elevates digital avatar customisation to unprecedented heights. Utilising AI, BUVATAR empowers users to fully program the appearance and behavior of their avatars using natural language and visual guides. The 3D and texture details are rendered with angular and temporal consistency through its advanced diffusive rendering engine.

When integrated with MotionGPT, BUVATAR offers a seamless and fully programmable pipeline for visual storytelling. Now, anyone can create their own virtual movie star and bring their imagination to life.



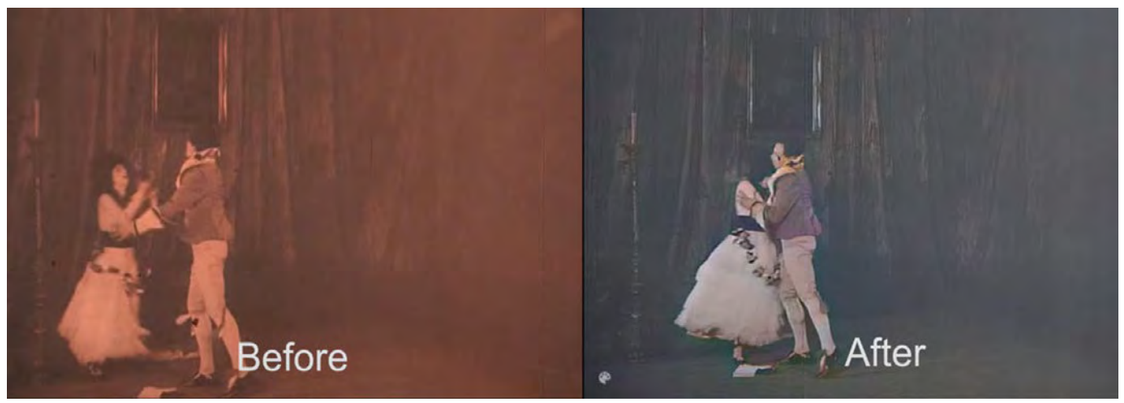


PROJECT-IN-CHARGE

Professor Chen Jie
Associate Professor
Department of Computer Science

MODERNISING SILENT MOVIES WITH ARTIFICIAL INTELLIGENCE

A new way of preserving history and rejuvenating digital archives



Silent movies are historical resources in our society and this project strives to preserving these historical relics. Drawing on his expertise in image restoration, Professor Wan Renjie aspires to help contemporary audiences understand human experiences in the past by giving silent movies a second life.

In order to enable audience to better appreciate silent films, a team of HKBU researchers uses artificial intelligence technologies to develop novel ways that can rejuvenate classical silent films. The two-year research project harnesses the latest artificial intelligence technologies to enhance the viewing experience while preserving the films' aesthetic values.

To make silent movies more aesthetically appealing to modern audiences who are accustomed to the immersive audio-visual feasts, one of the focuses of the research project is to apply image processing techniques and computer vision to colourise low-quality monochrome video frames by training machine learning algorithms to generate colours to the early motion pictures.

Generating audible dialogue is another key aspect of the project. Based on the information on the intertitles, Professor Wan is developing an audio processing technology that can transform the text into audio. In addition, the project will analyse the oral movement of the actors in the video frames to generate spoken dialogue.

Also, due to film deterioration, some video frames of the silent movies are lost. To complement the lost information, the research team is deploying generative models to restore the frames and generate new content based on the descriptions in the intertitles.

PROJECT-IN-CHARGE

Professor Wan Renjie
Assistant Professor
Department of Computer Science

Learn More

PROJECT LABYRINTH

An immersive experience to parallel realities of the game world

Inspired by the mythologies of old such as the Minotaur, Professor Eugene Alexander Birman, in partner with the French art director Xavier Reyé, created the “Project Labyrinth” which provided an immersive a video-meets-video game production that reflects on a world facing obliteration.

Premised on Yeo Siew Hua’s forthcoming film and performance work, The Once and Future for NVAF 2022, Project Labyrinth, like Noah’s Ark in our digital age, imagines the survival of mankind’s extinction. Except ours is not a ship, but an interconnected network called the “Labyrinth” and the project was to simulate the process of uploading ourselves for the sake of posterity.

The only chance of survival lies in the creation of an artificial Intelligence that becomes not only a repository but also a personification of the experiences of ordinary lives. The process emerges through maze-like plot lines inspired by mythologies of old such as the Minotaur, a fabulous beast that combines man and animal in a metaphor that refers to the past but also to the hybrid future.

Audience can immerse themselves in the world extinction environment created by the team and experience various parallel realities of the game world.

SPACE TO BREATHE

A call for public awareness in air pollution

PROJECT-IN-CHARGE

Professor Eugene Alexander Birman
Associate Director Internationalisation and Associate Professor
Academy of Music

Space to Breathe is a project that seeks to raise awareness about air pollution through an immersive exhibition and vocal performances called ARIA. The project is a collaboration of artists and scientists from HKBU with an exhibition and music performances held in Hong Kong Park with the cooperation of the Leisure and Cultural Services Department.

ARIA is an attempt to enhance everyone’s perception of air, and with increased sensitivity to our surrounding environment, the daily choices we make can transform it.

The integration of big data into music composition is another highlight of ARIA, with composer and economist. Professor Eugene Alexander Birman worked with HKBU’s Department of Computer Science to compare public views on air pollution with scientific findings through big data analyses. The immersive art experience will feature live holograms, live voices of the Hong Kong Children’s Choir, and an installation art created by Professor Kingsley Ng.

The project aims to unite art and science in raising awareness about air pollution and its effects on the environment.

Learn More

IN PARTNER WITH

Xavier Reyé
Creative Director /
AI Modelling & Rendering

Yeo Siew Hua
Director / Writer

Roger Garcia
Executive Producer

Topi Lehtipuu
Executive Producer

Anandi Bhattacharya
The “AI”

Serj Tubash
Technical Director

Stanley Dodds
Conductor

Learn More

PROJECT TEAM

Professor Eugene Alexander Birman
Associate Director Internationalisation and Associate Professor
Academy of Music

Professor Kingsley Ng
Associate Professor
Academy of Visual Arts
Programme Director of BASc (Hons) in Arts and Technology

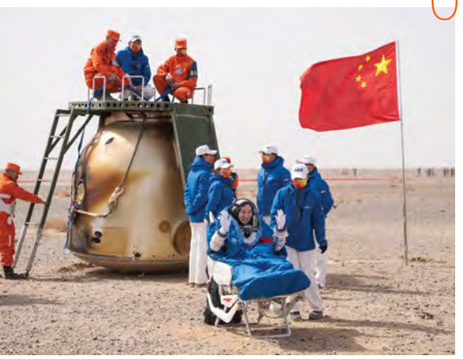
Professor Johnny M Poon
Associate Vice-President (Interdisciplinary Research)
Dean of the School of Creative Arts
Chair Professor in Creative Arts
Dr. Hung Hin Shiu Endowed Professor in Music

Professor Chen Li
Associate Head (Research) and Professor
Department of Computer Science
Professor (Affiliate)
Department of Social Work

ART TECH FOR THE SPACE MISSION

Combination of design and engineering to solve real-life challenges

01



Landing chair for Spacecraft Shenzhou Series

The project “Astronaut’s landing chair” demonstrates the potential of innovative design to solve real-world problems with engineering. The collaboration between Professor Anna Qin, Shenzhen ND Industrial Design, and the Astronaut Centre of China has resulted in the creation of a portable ergonomic chair that provides immediate support to astronauts’ musculoskeletal system deterioration during venue transfer.

Professor Qin’s human-centered design approach has been applied to develop products that address the challenges of today’s world, and her work on the Landing Chair is a prime example of this. As the chief designer of the 1st generation Landing Chair for spacecraft Shenzhou-10, Professor Qin has optimised the 3rd generation (for Shenzhou-13) from ergonomics, materials, engineering, and aesthetics for a better experience from both the users’ and audiences’ perspectives.

The project is an achievement in the field of equipment design, demonstrating the successful combination of design and engineering to solve challenges faced by astronauts during space flight missions.

02

Injector design for outer space applications

During long-term spaceflight, astronauts will suffer a serious issue of decreased bone density, risk of bone fractures and degraded muscle performance in the microgravity outer space. To mitigate astronauts’ muscle and bone loss, Professor Qin from Academy of Visual Arts and Professor Zhang Ge and his team from the School of Chinese Medicine have worked together on an injector design for outer space applications. The needle-free design injector could protect astronauts against both muscle and bone loss in microgravity.

PROJECT-IN-CHARGE

Professor Anna Qin
Assistant Dean (Teaching and Learning)
School of Creative Arts
Assistant Professor
Academy of Visual Arts

Learn More

GENERATIVE ADVERSARIAL NETWORKS

Collaborative artistic production with machine learning and automation

PROJECT TEAM

Professor Peter Nelson
Associate Director (Teaching and Learning) and Associate Professor
Academy of Visual Arts

Professor Roberto Alonso Trillo
Associate Professor
Directed Studies Coordinator
Academy of Music

Professor François Mouillot
Assistant Professor
Department of Humanities and Creative Writing

While artificial intelligence has been successfully applied in the visual arts, the training of algorithms to generate sounds and music in the waveform domain has yet to be fully explored. The project “Collaborative Artistic Production with Generative Adversarial Networks” explores the use of machine learning and automation in creative practice and its potential to change human creative and artistic processes. The project specifically uses Generative Adversarial Networks (GANs) to investigate how basic artistic principles such as form, function, and aesthetics might change due to the introduction of a semi-autonomous system of generation.

The project is divided into four separate research stages, each involving its own set of sub-questions:

1st stage — examines how GAN systems can function as artistic tools for the creation of 3D forms, and how reversible encodings of these forms can be used to experiment with traditional semiotic systems.

2nd stage — examines GANs’ ability to discern patterns and embedded information in a diverse data set of hand tools spanning human history.

3rd stage — applies a GAN system to a music ecosystem in an attempt to blur the boundary between the human creator and the generative system in a live performance context.

4th stage — takes advantage of cultural studies and ethnographic methods to examine how the use of these technologies can be resolved more broadly within historical models of the artist and the artwork.

The project is a significant exploration of the intersection between technology and artistic agency, and its potential to enhance the creative process and produce new and innovative works of art.

Learn More

THE FORESEEN PROPERTY AGENCY

Harnessing Art Tech to preserve Hong Kong's heritage

The Foreseen Property Agency represents a pioneering fusion of technology and art in cultural preservation. This ongoing project utilises advanced 3D scanning and artificial intelligence to create virtual models of Hong Kong's traditional small businesses, offering a digital yet tactile connection to the city's rapidly changing landscape.

By transforming old shops into detailed virtual 3D "point cloud models", the project not only archives the physical spaces but also invites public interaction. These models enable a unique exploration experience, awakening collective memories and fostering a sense of community conservation.

The initiative goes beyond passive preservation, engaging the public in a symbolic "pre-sale" of the digital models which serves as a thought-provoking commentary on the value of heritage in the face of commercial development. This aspect underscores the project's innovative approach to blending commercial strategies with cultural conservation efforts.

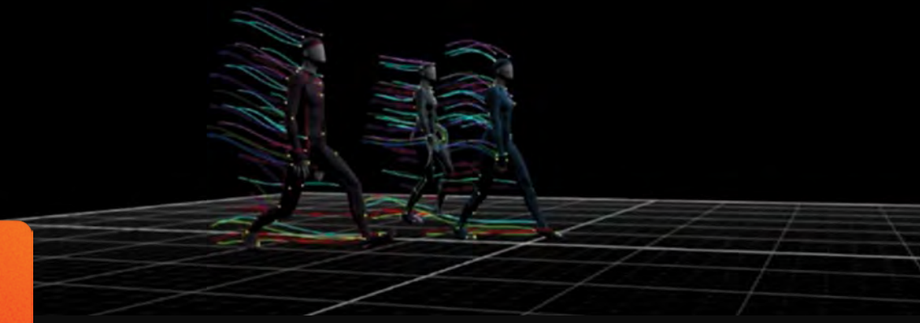
Backed by the Hong Kong Arts Development Council and the Design Trust Seed Grant, the Foreseen Property Agency is a testament to HKBU's commitment to integrating cutting-edge technology into the arts. The project not only stands as a guardian of the past but also as a beacon for the future of community conservation.

Learn More

PROJECT TEAM

Professor Pat Wong
Assistant Professor
Academy of Visual Arts

Professor Kachi Chan
Assistant Professor
Academy of Visual Arts



INTEGRATING CINEMATIC ARTS AND NEW TECHNOLOGIES FOR NURTURING NEXT-GENERATION TALENTS

Our Academy of Film is dedicated to providing cinematic-arts and creative media education to nurture young talents into professionals for the local and global arts and cultural industries. It is currently Hong Kong's flagship film school in terms of its size, breadth of programmes, distinguished alumni and strong industry connections. It is home to the Centre for Film and Moving Image Research, which promotes research into film, the moving image, and digital humanities.

Global Storytelling: Journal of Digital and Moving Images

The open-access journal is an international and interdisciplinary forum for intellectual debates concerning the politics, economics, culture, media, and technology of the moving image. It invites submissions that emphasise storytelling as a particular field of inquiry across different audiovisual formats, such as documentaries, journalistic videos, personal essays, broadcast series and serial dramas, and user-generated content. The journal aims to engage in cross-border, cross-disciplinary, cross-ideological and cross-cultural inquiry.

Learn More

Global University Film Awards (GUFA)

Organised by HKBU since 2018, GUFA strives to encourage and recognise emerging filmmakers among university students, foster creative exchange among film students around the world, and build synergy between regional young talents and international creative industry. It offers a global platform for showcasing student films from around the globe to display a panoramic view of the inner world of the young filmmakers. It gives the aspiring filmmakers an international stage to be heard and seen.

Learn More

"The University Oscars"

In 2022

2,341
submissions

100
countries / regions

Australia, France, Germany, Hong Kong, India, Chinese Mainland, Russia, South Korea, UK, US and others

HKBU ART TECH STARTUPS

The synergy of art and technology can revolutionise art creation and consumption. HKBU conducts groundbreaking research and development in Art Tech, harnessing technology to reimagine possibilities in the artistic world.

HKBU drives research and technology translation, bringing ideas to life and transforming them into practical applications. Our artists and innovators find themselves in an ecosystem which supports their creative and entrepreneurial venture in fostering social, economic, and cultural impacts. Below are our featured Art Tech startups:

BAM Limited

BAM Limited aspires to establish an innovative music production marketplace centred on AI services, focusing on Cantonese vocal cloning through the "SoftVC VITS Singing Voice Conversion model". With a focus on Cantonese singing, the model captures emotions and key musical features, hence understanding and generating music.

BAM provides services by offering AI vocals to tickle problems of the industry, for instance, insufficient demo singers and artist management services. BAM also caters to the individual creative needs of customers by offering personalised music solutions. By bringing such innovation to the industry, BAM aims to disrupt the existing music industry and create a new market space.

FOUNDERS

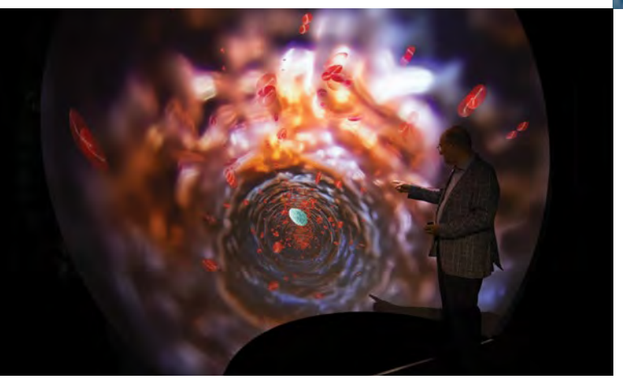
Professor Johnny M Poon
Associate Vice-President
(Interdisciplinary Research)
Dean of the School of Creative Arts
Chair Professor in Creative Arts
Dr. Hung Hin Shiu Endowed Professor in Music

Dr Edmond Tsang
Associate Professor of Practice
Programme Director of BMus (Hons) in Creative Industries
Academy of Music

Immersive Unlimited Limited

Immersive Unlimited Limited (iU) leverages the narrative power of new media technology to explore its creative use in the fields of expanded cinema, virtual and augmented reality, 360-degree 3D visualisation environments, navigable cinematic systems, and interactive narrative.

iU focuses on the four core business segments: immersive experiences, innovative technology development, content creation and application licensing. The target market includes cultural institutions, museums and archives, the creative industries and entertainment sector, tourism, education, scientific visualisation and industrial simulation, as well as brands and companies looking for creative ways to promote the experience of their products or services.



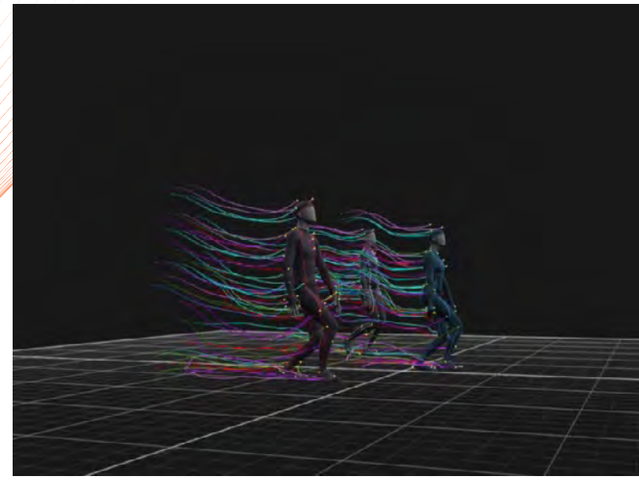
FOUNDER

Professor Jeffrey Shaw
Chair Professor
Academy of Visual Arts

Lumos Arts and Technology Limited

Lumos Arts and Technology is a pioneer in the field of Artificial Intelligence Generative Content (AIGC), offering groundbreaking AI-driven solutions for vision and motion content generation. The company provides cost-effective solutions for high-quality 3D modeling and motion capture (MOSCATO) that rival professional studio equipment.

Utilising Lumos' advanced technology, users can effortlessly craft and manipulate the appearance (BUVATAR) and actions (MotionGPT) of virtual avatars through intuitive natural language scripts and visual prompts. The company's cross-modal visual content generation solution (Lumino) weaves engaging visual narratives for a variety of live performance scenarios, including concerts, operas, and interactive art installations.



FOUNDER

Professor Chen Jie
Associate Professor
Department of Computer Science

FOUNDER

Professor Eugene Alexander Birman
Associate Director Internationalisation and
Associate Professor
Academy of Music

Minotaur Pictures Limited

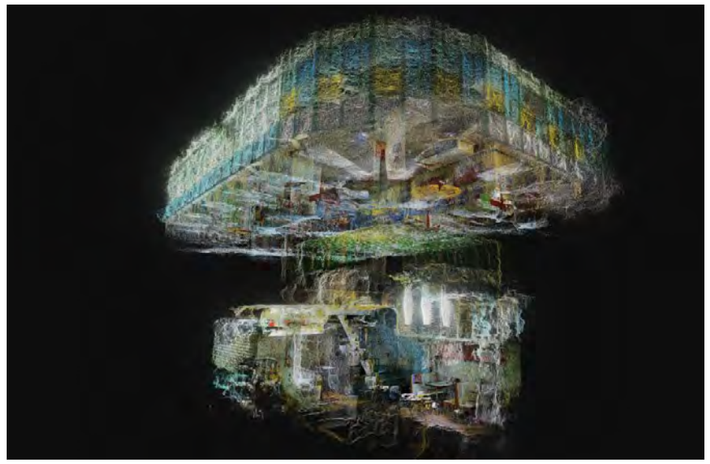
Minotaur Pictures Limited serves as the promotional and further research & development vehicle for "The Once and Future" project, a groundbreaking Art Tech project created through a partnership between HKBU, the Leisure and Cultural Services Department, Arts House Limited Singapore, and the Singapore National Arts Council.

The work integrates cinema, music, machine learning, and laser design that also recouped initial investment cost by its first performance, proving that cultural projects with blue-chip international partners can be not only ambitious but also profitable. The performance will be rerun with refined technology and will create digital spin-offs with extensions of the technology into video games and interactive media.

Space and Place Limited

Space and Place Limited is an art and cultural tech startup with a mission to safeguard and invigorate cultural heritage through best-in-class 3D scanning technologies and interactive storytelling mediums. The company creates digital replicas of cultural artifacts and environments, making them accessible and engaging for a modern audience. Its core technology leverages Gaussian Splatting for efficient and high-quality 3D point cloud processing, offering a cost-effective alternative to traditional LiDAR scanning.

With a strong current focus on community-driven projects, Space and Place stands at the intersection of heritage conservation and the digital future, poised to become an essential partner for cultural institutions and developers.



FOUNDERS

Professor Pat Wong
Assistant Professor
Academy of Visual Arts

Professor Kachi Chan
Assistant Professor
Academy of Visual Arts

Hydroverse Company Limited

Hydroverse Company Limited is a dynamic startup focused on revolutionising the future of immersive wellbeing using the healing power of H2O while implementing sustainable use of natural resources. We specialise in developing innovative and accessible solutions that enhance independence, convenience, and well-being, such as smart water misting shower systems and automatic hair washing systems with voice-controlled interfaces.

Committed to inclusive design, Hydroverse's products cater to individuals with mobility limitations and special needs, providing a spa-like experience. The company is also exploring the development of hydrotherapy products that offer therapeutic benefits and promote relaxation.

FOUNDER

Professor Anna Qin
Assistant Dean (Teaching and Learning)
School of Creative Arts
Assistant Professor
Academy of Visual Arts

Motion Expert HK Limited

Motion Expert HK Limited transcends conventional film production by leveraging generative AI technology. The company's Generative AI Creative Producer (Genai CP) strives to address industry challenges such as creativity block and burn out, budget constraints, schedule management and the absence of a systematic dissemination of knowledge and experience.

With valuable input from renowned practitioners, Motion Expert HK Limited programmes its very own Genai CP in a wide array of aspects spanning directing, script writing, producing & shooting, art & design, editing & computer graphics. To empower aspiring filmmakers, the company provides service covering creative content creations, tech-driven publishing, production management and patent & licensing. Standing at the forefront of nurturing talents, the company is also a credible learning platform by democratising access to film education.

FOUNDER

Mr Norman Chan
Guest Teaching Fellow
Academy of Film

Domain Technology Limited

Domain Technology Limited is a startup focused on improving the governance of Artificial Intelligence Generated Content (AIGC). The company develops innovative solutions to tackle challenges such as misinformation, bias, and misuse, ensuring AI technologies are used ethically and responsibly. By creating tools for monitoring and regulating AIGC, Domain Technology assists organisations and governments in maintaining transparency and accountability.

The company fosters collaborations among policymakers, industry leaders, and the public to promote the establishment of global standards and best practices for AIGC governance. Additionally, it places a strong emphasis on education and public awareness, offering resources that help users understand and navigate the complexities of AIGC responsibly. Through its initiatives, Domain Technology strives to balance innovation with ethical considerations, ensuring AIGC contributes positively to society while minimising potential risks.

FOUNDER

Professor Wan Renjie
Assistant Professor
Department of Computer Science

Gestura Limited

Gestura Limited specialises in advanced AI-driven software for string musicians, offering next-generation analytics to capture the subtle details of virtuosic technique as digital datasets. Using proprietary gesture-tracking hardware and machine learning, musicians can train personalised AI agents for real-time feedback, technique improvement, and performance augmentation.

These AI digital twins can be shared and monetised, expanding influence beyond traditional instruction. Gestura supports interactive multimedia functions for education, performance, and data analysis, creating a new creative marketplace for musicians. By providing individualised, AI-based insights, Gestura empowers musicians to enhance practice and performance with data-driven feedback.

FOUNDERS

Professor Peter Nelson
Associate Director (Teaching and Learning) and
Associate Professor
Academy of Visual Arts

Professor Roberto Alonso Trillo
Associate Professor and
Directed Studies Coordinator
Academy of Music

HKBU LABORATORIES, INFRASTRUCTURE AND FACILITIES

Visualization Research Centre

The Visualization Research Centre (VRC) provides innovative platforms for theatre, dance, music and sports, and transforms multimedia archives into post-cinematic encounters that people can explore and experience.

New forms of immersive experience can be enjoyed at the 360-degree cinema at the VRC, which showcases the unique outcomes of the “Future Cinema Systems: Next-Generation Art Technologies” . Walking into the LED Visualisation Cinema, the audience can fully immerse themselves in a three-dimensional environment. Viewers are not merely looking at panoramic movies or photographs; they also get the sense of stepping inside a spectacular virtual landscape. The visual experience is amplified by a 32.4 channel surround sound system that further substantiates the sense of immersion.

The other innovative facility at the VRC is the iDome Cinema, which comprises a laser DLP projector, a vertical hemispherical screen and surround sound audio equipment. Ideally suited for museological exhibitions, the iDome Cinema uses a fisheye lens to project spherical photos and videos that can be interactively rotated.

Learn More

Motion Capture and Visualization Laboratory

HKBU Motion Capture and Visualization Laboratory aims to be a comprehensive base for multi-person motion capture and analysis, an experimental and demonstrative space for AR/VR/XR research and applications, and an exploratory space for cognitive-driven generative creativity.

Learn More

The Lab is one of HKBU’s spearheading forces to enable and promote interdisciplinary research in art technology with global impacts in the academy and beyond, by building the world’s first and largest Labanotation annotated 3D motion capture dataset. It will enhance Hong Kong, China’s global status in the art technology development industry and attract more international talents from the expertise domain. The Lab empowers the collaboration and communication between faculties, scholars, students, and professionals from various industries to enhance knowledge exchange and creation.

CHRYSALIS - HKBU Art Tech Incubation Hub

CHRYSALIS - HKBU Art Tech Incubation Hub is dedicated to fostering the incubation of cutting-edge Art Tech projects and entrepreneurial activities by providing a creative environment for our innovators and artists.

Located at the Jockey Club Creative Arts Centre (JCCAC), CHRYSALIS offers one-stop-shop facilitation to support technology development and streamline the process of translation and demonstration. Our goal is to bridge the gap between artistic vision and technological innovation, fostering social, economic, and cultural impacts. CHRYSALIS also serves as a vibrant space for a multitude of Art Tech events and showcases to promote collaborations.

CHRYSALIS's state-of-the-art infrastructure for translational developments and entrepreneurship:

Learn More

Full Dome Theatre

The Dome screen is over 4 metres in diameter, providing a highly immersive viewing experience. The advanced 4K laser projection systems and a high-fidelity fisheye lens support 3D stereoscopic projection at a high refresh rate of 120Hz.

Mechatronics Studio

The Studio facilitates the crafting of high-quality 3D products with industrial-level productivity, featuring the J850™ 3D Printer with its extensive colour palette and multi-material printing capabilities, as well as the high-speed Selective Laser Sintering (SLS) 3D Printer Fuse 1, among other advanced technologies.

Materials Discovery Corner

The Corner is a meticulously curated materials library which unveils the latest trends in materials research, fostering creativity and innovation in design and product development.

Sound-Recording & Mixing Studio

The Studio accelerates technology translation with its cutting-edge technologies and facilities which support sound recording, mixing, editing, movie dubbing, post-production work and more.

Harmonix Innovation Lab

The Lab is a dynamic environment for musicians to enhance collaborative digital music-making and provide AI model trainings. It supports generative AI music development.

Multipurpose Space

The Space hosts a wide range of events from exhibitions, experiential activities, entrepreneurship workshops to investors networking events.

Co-Working Space

This Space is furnished with individual workstations with adaptable configurations, a fully equipped meeting room, and a multi-functional event area.

Jockey Club Creative Hub

The Jockey Club Creative Hub, home to the Academy of Music, is a vibrant, interdisciplinary space dedicated to the exploration of music and sound. Our mission goes beyond creating and commercialising groundbreaking audio technologies. Through interdisciplinary collaboration, we aim to drive revolutionary change, impacting lives globally through the universal language of music and sound.

Equipped with the following state-of-the-art facilities and diverse research groups, it's a nexus where teaching, learning, research, knowledge transfer, and collaboration thrive through the synergy of art and technology.

Jockey Club White Box Experimental Space

The White Box houses NADIA, an advanced audio platform with the Meyer Sound Constellation System for simulating acoustic environments effortlessly. Its Spatial Audio Synergy offers precise 3D sound positioning.

Studio 5 - Scoring Stage

Studio 5 is the largest scoring stage in Hong Kong, specifically designed for full orchestra with choir and solo recital. Its acoustic wall finish and adjustable ceiling panels manage sound diffusion, echo, reverb and overall acoustic quality.

LIATe

The Lab serves as a calibration and pre-production space specifically designed for innovative research in immersive 3D audio and multi-screen video projects.

Volumetric Vision Lab

The Lab specialises in advanced human motion capture and body reconstruction. Its cutting-edge techniques enable realistic animations for film, gaming, and virtual experiences

Organ Recital Hall - Elizabeth Hung Wong Activity Room

The Hall is a majestic organ performance venue, featuring the renowned C.B. Fisk, Inc., Opus 158.

Dolby Atmos Post Production and Live Music Studio

The Studio's cinematic film screening room features theatre grade Dolby Atmos Feature Studio Certification. With unparalleled sound quality with clearer dialogue, it offers dynamic sound effects, and rich musical detail.

Experience Centre - Mr. & Mrs. Chan Hon Yin Hall

The Centre features a 49:9 and 11-meter curved LED screen, equipped with advanced technology for live streaming sessions, showcases, and knowledge exchange sessions.

Learn More

Life Science Imaging Centre

HKBU's Life Science Imaging Centre is equipped with state-of-the-art brain imaging facilities, including a 3T Magnetic Resonance Imaging (MRI) scanner, Electroencephalogram (EEG), functional Near-Infrared Spectroscopy (fNIRS), and Transcranial Magnetic Stimulation (TMS) system. These advanced technologies enable us to support academics from diverse disciplines in conducting impactful research projects that address a wide range of emerging global issues.

Leveraging the advanced facilities provided by the centre, scholars at HKBU have undertaken a multitude of innovative and groundbreaking research projects. These projects encompass a wide range of topics, including the exploration of the neural architecture of leadership, the examination of the correlation between the human gut microbiome, food preferences, consumption, and brain activity, the investigation of collaborative inter-brain behaviours in music ensembles and the development of brain network strategies for modulating neurocognition and treating neuropsychiatric disorders. Through these studies, our scientists are pushing the boundaries of knowledge and making significant contributions to their respective fields.

Learn More

ART TECH RELATED FACULTIES AND DEPARTMENTS

School of Creative Arts

Academy of Visual Arts

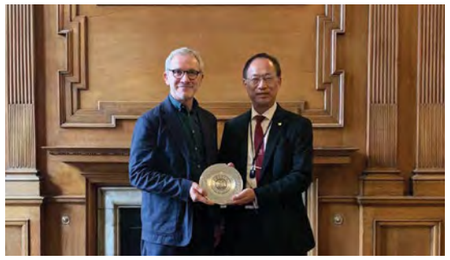
Academy of Film

Academy of Music

Department of Interactive Media

Department of Computer Science

plus other departments



INNOVATE
TRANSLATE
TRANSFER

Institute for Innovation and Translation
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