

Admissions to Postgraduate Studies at HKUST(GZ)

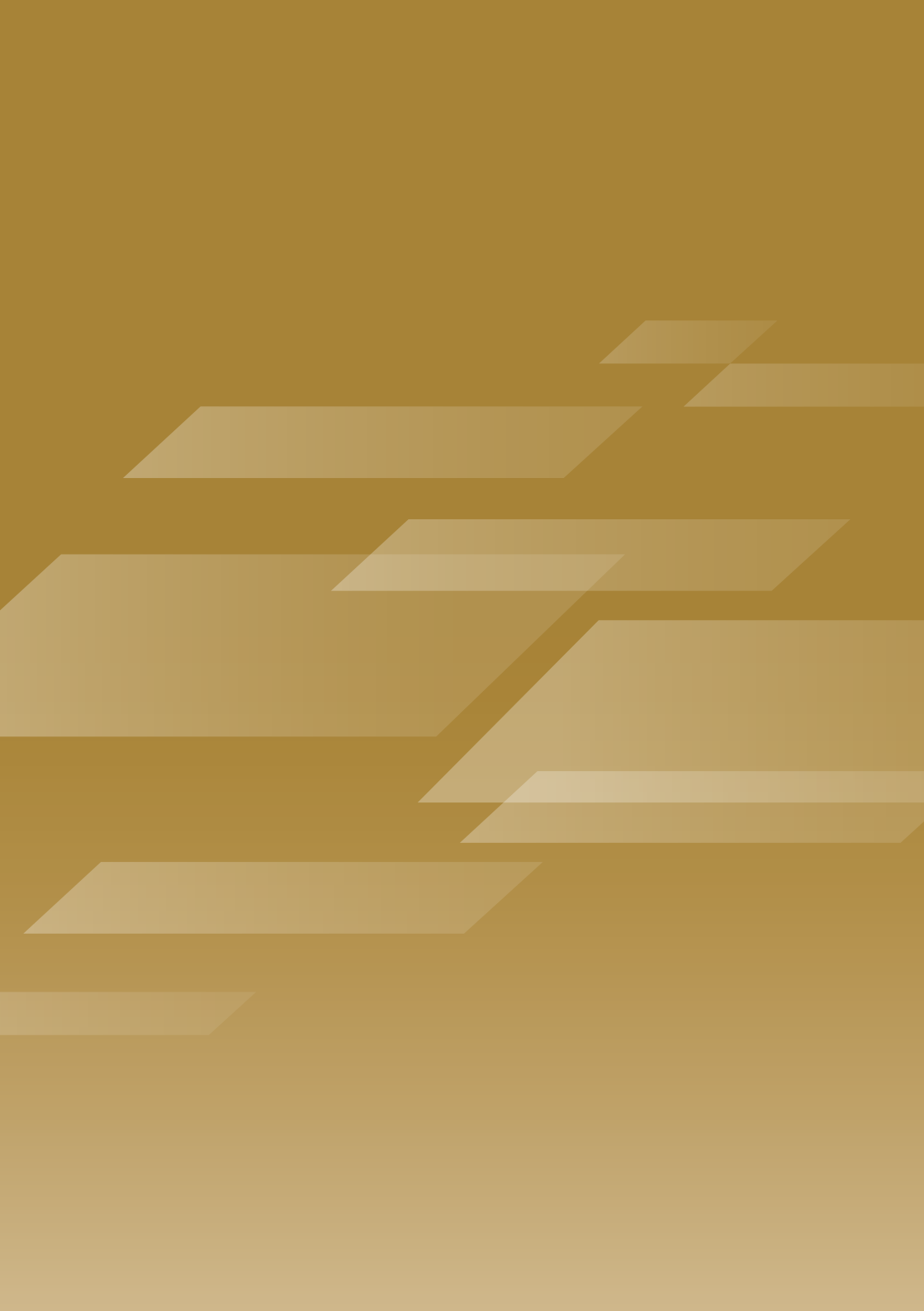
Postgraduate Programs
2024-25










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Contents

	Welcome	1
	Programs	2
	Function Hub	3
	Information Hub	7
	Society Hub	11
	Systems Hub	15
	Submit Your Application	19



Welcome

Welcome, students!

As you step through the gates of our brand-new, stunning campus, you should feel a rush of pride--not just a pride in our awesome architecture, but pride in an awesome idea and system. For you are joining a university whose structure and philosophy have no prior precedent. First, our overall framework is unique, we being the other half of a "Unified HKUST-Complementary Campuses". We complement the superb disciplinary strengths of HKUST. Together, we create unlimited synergistic possibilities. In our calculation, "one-plus-one" does not equal two. It equals more. The early and extraordinary success of our Hong Kong twin brother has given us a huge head start.

By now, you may know that HKUST(GZ) has been created to fulfill a national mission: to nurture tip-top talents capable of tackling the complex challenges that our community and country face. When you graduate, you will be brandishing more than just a diploma for your efforts. Your intellectual gifts and technical know-how will be your calling card. Our special cross-disciplinary structure is designed to help you get there.

We have therefore dismantled the traditional academic divisions, doing away with departments and faculties. Under our pioneering academic structure, you may belong to one of the 4 interconnected Academic Hubs incorporating 16 cutting-edge Thrusts. This previously untried model breaks down disciplinary silos and academic boundaries, allowing scholars and students to build bridges across multiple disciplines. Under such arrangements, our ideal students are forward-looking, innovation-seeking, problem-solving talents with the core competencies that transcend traditional disciplines.

We believe the academic and living life at HKUST(GZ) will prepare our students to rise to the unforeseen challenges of our time. With great difficulties come great opportunities and the possibility of great triumphs. Your duty and ours is to see that you fulfill your potential.

HKUST is a legendary miracle-maker, boasting a record of accomplishments in record time that wows the world. We at Guangzhou are determined not to be anything less.

I invite you to chase our dream in an exciting journey without boundaries.

Prof. Lionel M. Ni

President

The HKUST (GZ) Advantage



Unified HKUST,
Complementary
Campuses



Innovative
Cross-Disciplinary
Postgraduate Studies



Earn an
HKUST Degree



State-of-the-Art
Research Institutes



World-Class
Faculty



To Hong Kong via
High-Speed Train



International
Opportunities



Cross-Campus
Study Opportunities

2024-25 Postgraduate Programs

Hub	Thrust	Programs	Research Program		Taught Program
			PhD	MPhil	MSc
Function	Advanced Materials	Advanced Materials	●	●	
	Earth, Ocean and Atmospheric Sciences	Earth, Ocean and Atmospheric Sciences	●	●	
	Microelectronics	Microelectronics	●	●	
	Sustainable Energy and Environment	Sustainable Energy and Environment	●	●	
Information	Artificial Intelligence	Artificial Intelligence	●	●	
	Data Science and Analytics	Data Science and Analytics	●	●	
		Data-Centric Artificial Intelligence Technology			●
	Computational Media and Arts	Computational Media and Arts	●	●	
Society	Internet of Things	Internet of Things	●	●	
	Financial Technology	Financial Technology	●	●	
	Innovation, Policy, and Entrepreneurship	Innovation, Policy, and Entrepreneurship	●	●	
		Technology and Policy			●
Systems	Urban Governance and Design	Urban Governance and Design	●	●	
	Carbon Neutrality and Climate Change	Carbon Neutrality and Climate Change* *MPhil/PhD Program in CNCC is under development.	●	●	
	Bioscience and Biomedical Engineering	Bioscience and Biomedical Engineering	●	●	
	Intelligent Transportation	Intelligent Transportation	●	●	
	Robotics and Autonomous Systems	Robotics and Autonomous Systems	●	●	
	Smart Manufacturing	Smart Manufacturing	●	●	



Vision

To unlock the potential of basic elements in hard and natural sciences, and seek advanced and sustainable solutions to address real-world problems, thus benefitting mankind and the advancement of humanity.

Mission

To rigorously discover and comprehend the fundamental properties and characteristics of hard and natural sciences, and bring profound knowledge into an innovative process of merging and reassembling through continuous breakthrough and cross-disciplinary collaboration, and finally to champion the leading-edge ideas for practical advancements which make significant impact on society.

While the scope of cross-disciplinary research will serve the national development strategy and respond to market demand, Function Hub focuses in the near term on the following four thrust areas: Advanced Materials (AMAT); Earth, Ocean and Atmospheric Sciences (EOAS); Microelectronics (MICS); and Sustainable Energy and Environment (SEE). And currently Function Hub offers four programs accordingly both in Master of Philosophy and Doctor of Philosophy.

Function Hub welcomes students with strong analytical mind from a diverse set of backgrounds. We will strive to provide an environment to facilitate collaboration among students and between students and faculty members across disciplines and across the Hubs. We aim to nurture graduates with independent mind, critical thinking skills, research capability, and relevant domain knowledge highly valued by the scientific, industrial, and technology communities.

Dean



Prof. Weijia WEN

Chair Professor

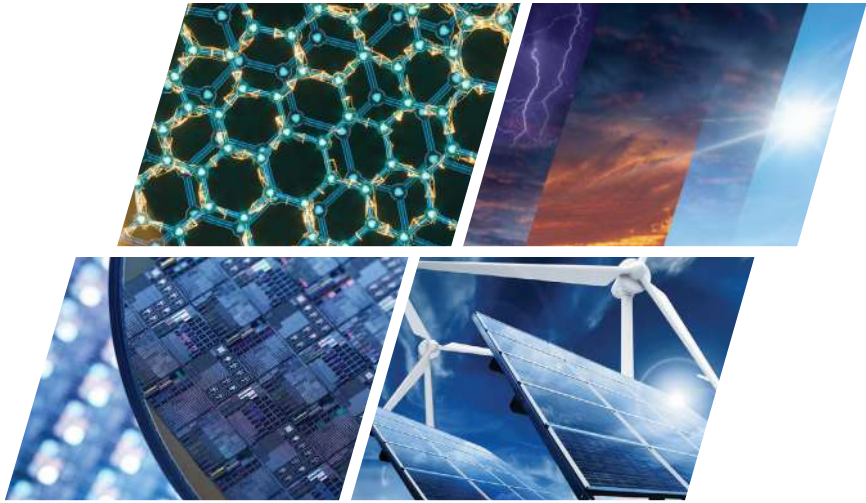
Dean of Function Hub, HKUST(GZ)

Research Interest **Condensed matter physics**

Prof. Wen received his PhD degree in condensed matter physics from the Institute of Physics, Chinese Academy of Sciences and worked as a postdoctoral fellow in the University of California, Los Angeles. He is a leading expert in the field of soft matter, smart materials, wave metamaterials, nanometer biomaterials, advanced functional structural materials, optoelectronic advanced materials and microfluidic chip design and fabrication.

A highly respected researcher with excellent experience, Prof. Wen has won a series of awards and had taken up various important academic leadership roles, such as: In 2000, he was awarded the National Outstanding Youth Fund (overseas); He served as the chief expert of the Public Welfare projects (Agriculture) in 2013. His research achievement on the electrorheological fluids won the second prize of the National Natural Science Award.

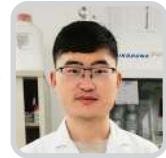
Prof. Wen has published more than 350 papers and most of them have been published in top scientific journals with total citation more than 13,000 times and h-index of 57. He has obtained 19 US and more than 40 Chinese patents, respectively. He has organized some important international conferences and given more than 50 times invited talk to date. He supervised more than 40 PhD. graduates. Served as a PI and Co-I, Prof. Wen has received more than 50 research grants. A number of his research outcomes successfully industrialized and commercialized to date.



Student Sharing

HKUST(GZ) has always advocated interdisciplinary integration. It not only gives researchers full freedom, but also in-depth study of every link of construction with cross-cutting concepts.

Hui KANG from China's Mainland
PhD Student in Advanced Materials



HKUST(GZ) fosters competitiveness, creative thinking and innovation, encouraging us working on innovative projects to promote holistic personality development.

Qinghong CUI from China's Mainland
PhD Student in Earth, Ocean and Atmospheric Sciences

The program offers high-quality domain knowledge courses and lays down solid foundations for further research. Seminars from different research areas exposed me to cutting-edge research from renowned universities worldwide.

Bohan HU from China's Mainland
PhD Student in Microelectronics



It is one of my wisest choices to enter HKUST(GZ). There are the most advanced instruments and equipment, the best professors, staff who actively serve teachers and students, and generous studentship.

Zihan HUANG from China's Mainland
PhD Student in Sustainable Energy and Environment

Function Hub - Thrust Areas

Advanced Materials

Advanced Materials, concerned with the structure and properties of materials, are enablers for existing and future technological innovations like microelectronics, biomedical devices, renewable energy / sustainable environmental technologies, and quantum communication / computing. Given the interdisciplinary nature and the diversity of materials science and technology, the aim of the Advanced Materials Thrust (AMAT) is to foster close collaborations with hubs (schools)/thrusts (departments) to conduct internationally leading research on impactful cutting-edge materials discovery and innovation.

Cross-disciplinary Focus Areas

- Functional Polymer Materials
- Metamaterials
- Bio-engineering and Bio-medical Materials
- Optoelectronic Materials
- Quantum Materials
- Electronic Materials
- Materials Informatics
- Wearable Sensors
- Materials Modeling and Computation



Prof. Ping GAO

Professor

Head of Advanced Materials Thrust, Function Hub

Research Interest

- Polymer
- Rheology of polymers
- 2D Porous polymer films
- Polymer membranes for biomedical, energy, environment and sensors
- High-performance polymer fibers, films and composites
- Nanocomposites

Earth, Ocean and Atmospheric Sciences

Earth, Ocean and Atmospheric Sciences Thrust (EOAS) delivers an interdisciplinary educational and research program that links oceanography, atmospheric science and earth surface science holistically. This interdisciplinary program aims to advance earth system science in an integrated way and prepare the next generation of earth system scientists for the growing challenges in the future. Such interdisciplinary knowledge and talents are essential to achieving and maintaining a sustainable environment under climate change on both regional and global scales.

Cross-disciplinary Focus Areas

- Ocean Physical-biogeochemical Study
- Earth Surface Processes in the Watershed
- Atmosphere-ocean Dynamics and Climate
- Ocean-atmosphere-land Interaction
- Earth System Modelling



Prof. Junyu ZHENG

Professor

Acting Head of Earth, Ocean and Atmospheric Sciences Thrust, Function Hub

Research Interest

- Source characterization and emission inventory
- Co-control of air pollution and carbon emissions
- Novel source measurement instruments and source tracing
- Application of big data and AI to environmental models and emission mitigation

Microelectronics

Microelectronics Thrust (MICS) nurtures future innovators, researchers, and professionals through top-tier education, pioneering research, and industry collaboration. Our comprehensive curriculum empowers students to conduct groundbreaking research in device and fabrication, circuits technology, architecture and systems, and electronic design automation. We cultivate innovation and collaboration, striving to remain at the forefront of microelectronics advancements and to be a global leader in education and research.

Cross-disciplinary Focus Areas

- Integrated Circuit and System Design
- Electronic Design Automation
- System Architecture and Design
- Devices and Fabrication



Prof. Jiang XU

Professor

Head of Microelectronics Thrust,
Function Hub

Research Interest

- System-on-chip
- Hardware-software codesign
- Hybrid photonic-electronic chip design
- Chip power management
- Machine learning system

Sustainable Energy and Environment

Sustainable Energy and Environment Thrust (SEE) focuses on cutting-edge research in the related cross-disciplines, including sustainable energy harvesting and conversion technologies; high-performance energy storage systems; digital energy technologies; smart energy distribution and mini grid, intelligent energy systems and energy saving strategies; hydrogen and electrolyzers; bioenergy and bio-inspired energy systems, and lifecycle analysis and recovery of energy system.

Cross-disciplinary Focus Areas

- Energy Harvesting, Conversion, and High-performance Energy Storage
- Smart Green Buildings
- Digital Energy Technologies
- Biofuel and Hydrogen Energy
- Smart and Bio-inspired Energy Systems
- Energy & Power Management and Resources Recovery
- Carbon Neutrality, Sustainable Environment and Pollution Control
- Energy Economics and Security, Global Energy & Environmental and Carbon Neutrality Policy



Prof. Huihe QIU

Professor

Acting Head of
Sustainable Energy and
Environment Thrust,
Function Hub

Research Interest

- Fluid Dynamics and Heat Transfer
- Bioinspired Flyers and Micro Air Vehicles (MAV)
- Power Electronics and Battery Thermal Management
- Micro Sensors and Actuators
- Thermal Comfort Sensing and Smart Buildings

Enquiries

Advanced Materials
Earth, Ocean and Atmospheric Sciences
Microelectronics
Sustainable Energy and Environment

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see@hkust-gz.edu.cn



Vision

To address global challenges arising from human interactions with information and technology in today's era of digital transformation.

Mission

To provide world-class education and conduct cutting-edge research with practical applications in information science and technology that not only advance regional development, but also make a global impact.

The Hub primarily comprises four thrust areas: Artificial Intelligence (AI), Data Science and Analytics (DSA), Internet of Things (IOT), and Computational Media and Arts (CMA).

We will achieve this through cross-disciplinary research and education in collaboration with other thrust areas in our Guangzhou campus and related programs in our Clearwater Bay campus. We welcome students from diverse backgrounds, ranging from Computer Science, Statistics, and Engineering to Business, Design, and the Arts.

Currently Information Hub offers four Research Postgraduate Programs both in MPhil and PhD (in AI, DSA, IOT and CMA), and Taught Postgraduate Program (Master of Science in Data-Centric Artificial Intelligence Technology).

Dean



Prof. Lei CHEN

Chair Professor

Dean of Information Hub, HKUST(GZ)

Research Interest

- **Data-driven machine learning**
- **Crowdsourcing-based data processing**
- **Uncertain and probabilistic databases**
- **Web information management**
- **Multimedia and time series systems**
- **Privacy**

Prof. Lei Chen, is a chair professor in the Data Science and Analytics Thrust at HKUST (GZ), Fellow of the IEEE, and a Distinguished Member of the ACM. Currently, Prof. Chen serves as the dean of Information Hub, the director of Big Data Institute at HKUST, MOE/MSRA Information Technology Key Laboratory. Prof. Chen's research interests include Data-driven AI, knowledge graphs, blockchains, data privacy, crowdsourcing, spatial and temporal databases and query optimization on large graphs and probabilistic databases. He received his BS degree in computer science and engineering from Tianjin University, Tianjin, China, MA degree from Asian Institute of Technology, Bangkok, Thailand, and PhD in computer science from the University of Waterloo, Canada. Prof. Chen received the SIGMOD Test-of-Time Award in 2015, Best Research Paper Award in VLDB 2022, .The system developed by Prof. Chen's team won The Excellent Demonstration Award in VLDB 2014. Prof. Chen had served as VLDB 2019 PC Co-chair. Currently, Prof. Chen serves as Editor-in-chief of IEEE Transaction on Data and Knowledge Engineering and an executive member of the VLDB endowment.



Student Sharing

HKUST(GZ) provided me with many resources for growing as a Ph.D. student, and ultimately, I joined a perfect team researching 3D computer vision. On top of the fantastic academic opportunities, the university is also a perfect bridge for me to connect with many talented and passionate students, alumni, and professors. I could not have imagined a better place than HKUST(GZ) for the four years of study.

Hao HE from Guangxi, China
PhD Student in Artificial Intelligence



Engaging in cross-discipline research is an incredibly rewarding and dynamic experience. It fills me with excitement and intellectual curiosity to explore the intersections between DSA and other fields, which broadens my understanding of the practical applications of data science in the real world. Studying DSA at the information hub has provided me with a stimulating and supportive academic environment, which has enabled me to grow both personally and professionally.

Zihan LUO from China's Mainland
PhD Student in Data Science and Analytics

I have always sought cutting-edge research in communication engineering. During my time here, I have been able to realize this dream by having an opportunity to interact with the brilliant and creative brains engaged in innovative research.

Murad ABDULLAH from Pakistan
PhD Student in Internet of Things



HKUST(GZ) encourages all kinds of academic innovation. Professors from different hubs and trusts will always strongly support student's research. All you need to do is be clear about what you want, make a plan and take action.

Beiyao CAO from Guangdong, China
PhD Student in Computational Media and Arts

Artificial Intelligence

Building on HKUST's strong research background, our AI Thrust is dedicated to advancing both fundamental and applied research in artificial intelligence and a broad range of enabling technologies that transform cutting-edge applications. Our goal is to cultivate top-tier professionals equipped with interdisciplinary expertise, international perspectives, and exceptional skills to drive innovation and breakthroughs in AI research and application.

Cross-disciplinary Focus Areas

- AI in Design
- AI in Business
- AI in Finance
- AI in Security and Privacy
- AI in Smart Living
- AI in Manufacturing
- AI in Smart Cities
- AI in Transportation
- AI in Talent Management
- AI in Public Health
- AI for Science



Prof. Hui XIONG

Chair Professor

Associate Vice President
(Knowledge Transfer)

Head of Artificial Intelligence Thrust,
Information Hub

Fellow of AAAS and IEEE

Research Interest

- Data mining and knowledge discovery
- Big data analytics
- Mobile computing
- Business intelligence
- Information assurance

Computational Media and Arts

This thrust area focuses on art creation and visual communication with new technologies, with emphasis on art with augmented reality (AR) and virtual reality (VR), AI-generated art, information art and design, and data visualization. It also promotes the interplay of art and technology and exploits the most advanced technology for art creation and visual communication with a social impact.

Cross-disciplinary Focus Areas

- AI/AR/VR/XR/Robotic art
- Data visualization and storytelling
- Human-computer interaction
- Game development and design
- Computer animation
- Virtual production



Prof. Kang ZHANG

Professor

Acting Head of Computational
Media and Arts Thrust,
Information Hub

Director of Interdisciplinary
Programs Office

Research Interest

- Visual Languages
- Graph Grammar and Their Applications
- Computational Aesthetics
- Generative Art
- Architectural Design
- Software Engineering

Data Science and Analytics

It advances data science and analytics by unifying statistics, machine learning, optimization, and their related techniques. It also expands the applications of data science and analytics to solve real world problems and to benefit society.

Cross-disciplinary Focus Areas

- Data-driven AI & Machine Learning
- Statistical Learning and Modeling
- Industrial and Business Analytics (Operations-Related Data Analytics, Business Intelligence and Strategy, etc.)
- Sector-Specific Data Analytics (Healthcare, Finance, Insurance, Marketing, Manufacturing, Transportation, etc.)
- Data visualization and Infographics
- AI-driven Data Analytics
- High-Performance Systems for Data Analytics
- Graph Databases and Blockchain
- AI for Science



Prof. Xiaowen CHU

Professor

Acting Head of Data Science and Analytics Thrust, Information Hub

Research Interest

- GPU computing
- Distributed machine learning systems (including federated learning)
- Computer vision for autonomous vehicles
- Vehicular networks

Internet of Things

This thrust adopts an interdisciplinary approach to equip students with integrated knowledge to pursue innovation and to explore new research frontiers in forming an Internet of Things (IoT) enabled society. It encompasses both theoretical and empirical methodologies, making advancements in fields such as networking, machine learning, systems, security and privacy, and human-machine interactions within the broad sphere of IoT.

Cross-disciplinary Focus Areas

- Optimization, artificial intelligence and machine learning in IoT
- Networking and communications
- Security and privacy-enhancing technologies
- Sensing and embedded systems
- Distributed computing
- Ubiquitous computing



Prof. Danny Hin Kwok TSANG

Professor

Head of Internet of Things Thrust, Information Hub

Fellow of IEEE and HKIE

Research Interest

- Smart grids
- Networking
- Wireless networking
- Cloud/Edge computing

Enquiries

Artificial Intelligence
Computational Media and Arts
Data Science and Analytics
Internet of Things

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iott@hkust-gz.edu.cn



Vision

To become a leading force in the knowledge economy of a digital society.

Mission

To nurture socially-conscious talents with cutting-edge analytical skills and an open and growing mindset, ready to resolve socio-economic issues and contribute to the knowledge economy in a networked society and rapidly changing world.

While the scope of cross-disciplinary research will serve the national development strategy and respond to market demand, the Society Hub focuses in the near term on the following four thrust areas: Carbon Neutrality and Climate Change; Financial Technology; Innovation, Policy, and Entrepreneurship; and Urban Governance and Design, which are inspired by several interesting patterns and trends emerging in the new century. Currently Society Hub offers three programs both in Master of Philosophy and Doctor of Philosophy. They are MPhil/PhD Programs in Financial Technology; MPhil/PhD Programs in Innovation, Policy, and Entrepreneurship; and MPhil/PhD Programs in Urban Governance and Design. Our first taught postgraduate program, Master of Science in Technology and Policy, was newly approved by the Ministry of Education in June, which will welcome its first cohort of students in Fall 2024.

The Society Hub welcomes students with strong analytical mind from a diverse set of backgrounds such as Economics/Business, Social Sciences, as well as Science and Engineering. We will strive to provide an environment to facilitate collaboration among students and between students and faculty members across disciplines and across the Hubs. We aim to nurture graduates with independent mind, critical thinking skills, research capability, and relevant domain knowledge highly valued by the business community, the think tanks, as well as policy/research institutions.

Dean



Prof. Danyang XIE

Chair Professor

Dean of Society Hub, HKUST(GZ)

Research Interest

- **Endogenous Economic Growth**
- **Fiscal Policy**
- **Money and Banking**

Prof. Danyang Xie received his Ph.D in Economics from the University of Chicago in 1992. His previous affiliations include University of Montreal (Assistant Professor, 1991-1994), the International Monetary Fund (Economist and Senior Economist, 2000-2004), Tsinghua University (Special Appointment Professor, 2002-2005), and Wuhan University (Dean of the Economics and Management School). At HKUST (1993-2002, 2004-present), he served as Department Head in Economics between April 2007 and June 2010 and Director of Shui On Centre for China Business and Management between May 2011 and July 2013. He had been a member of the Currency Board Sub-Committee of the Exchange Fund Advisory Committee between 2011 and 2016. He was an Independent Director of Bank of Communications-Schroders Fund Management Co. Ltd between 2011 and 2018.



Student Sharing

As a Fintech student, I appreciate the interdisciplinary approach to education as it helps me develop a deeper understanding of the rapidly evolving financial industry. By learning about quantitative methods and finance, I'm better equipped to tackle complex problems and develop innovative solutions using cutting-edge technology. I believe this approach will give me a competitive advantage in the Fintech job market and prepare me for a dynamic and rewarding career in the field.

Yusen JIA from China's Mainland
PhD Student in Financial Technology



Our professors from diverse backgrounds have enabled me to experience the joy of striving in science, innovating in interdisciplinary research, and viewing the world through innovation, policy, and entrepreneurship.

Eryu WANG from China's Mainland
PhD Student in Innovation, Policy, and Entrepreneurship

A range of interdisciplinary courses have broadened my horizons beyond my economics background. Surrounded by faculty and students with diverse, exceptional backgrounds, I've gained valuable insights and discovered new avenues for exploration through engaging brainstorming sessions and coursework.

Yueqi WU from China's Mainland
PhD Student in Urban Governance and Design



Society Hub - Thrust Areas

Financial Technology

FinTech Thrust nurtures creative minds to explore frontiers in Financial Technology, to shape the future financial industry that promotes social-financial health.

Cross-disciplinary Focus Areas

- Blockchain Technologies, Smart Contracts, and Digital Currencies
- Robo-Advising, Quantitative Investing, and Risk Management
- Machine Learning, Artificial Intelligence, and Big Data Analytics in Finance
- Technological Innovations for Financial Services
- Regulatory Technology (RegTech)
- Digital Economy and Financial Inclusion



Prof. Ning CAI

Professor

Head of Financial Technology Thrust, Society Hub

Research Interest

- FinTech
- Financial Engineering
- Green Finance
- Risk Management
- Data Science
- Stochastic Modeling

Innovation, Policy, and Entrepreneurship

IPE Thrust trains a new generation of leaders in solving complex problems at the interface of technology and society. We place a specific focus on innovation in technology, institutions, policy and entrepreneurship, as well as cross-disciplinary approaches and real-world applications.

Cross-disciplinary Focus Areas

- Innovation and Intellectual Property Right Protection
- Innovation and Technology Management
- Innovation and Public Policy
- Health Studies/Health Care Policy/ Environmental Policies/Sustainability
- Anti-Trust/Competition Policy
- Experimental Economics and Decision Sciences
- Entrepreneurship and Organization Theory
- Entrepreneurship and Financial Management



Prof. Danyang XIE

Chair Professor

Acting Head of Innovation, Policy, and Entrepreneurship Thrust, Society Hub

Research Interest

- Endogenous economic growth
- Fiscal policy
- Money and banking

Urban Governance and Design

The Urban Governance and Design Thrust aims to train the next generation of leaders in conducting cutting-edging innovative research on cities through cross-disciplinary approaches to solve complex urban problems.

Cross-disciplinary Focus Areas

- Education, Employment and Labor Markets
- Migration, Inequality, and Social Inclusion
- Population, Health, and Ageing
- Regional and Urban Economic Development
- GIS and Spatial Analysis
- Smart City
- Transportation and Communication Infrastructure



Prof. Ge Lin KAN

Professor

Head of Urban Governance
and Design Thrust,
Society Hub

Research Interest

- GIS
- Spatial Epidemiology
- Data Integration
- Aging and Urban Health

Carbon Neutrality and Climate Change*

The Thrust addresses key national priorities, trains next generation of leaders who face global challenges of climate change, seize opportunities of the new industrial revolution, and develop technical, institutional and policy solutions for a shared sustainable future.

Cross-disciplinary Focus Areas

- Carbon Science and Technology
- Climate Change and Governance
- Sustainable Energy Transition
- Climate Finance and Policy



Prof. Ye QI

Chair Professor

Acting Head of Carbon Neutrality
and Climate Change Thrust,
Society Hub

Research Interest

- Chinese Environmental and Energy Policy
- Environmental Policy and Governance
- Climate Change and Global Environmental Governance
- Sustainability Science and Governance
- Sustainable Urbanization

* MPhil/PhD Program in CNCC is under development.

Enquiries

Financial Technology
Innovation, Policy, and Entrepreneurship
Urban Governance and Design
Carbon Neutrality and Climate Change

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cncct@hkust-gz.edu.cn



Vision

To be a global leading facilitator for enlightening creative minds and fostering visionary talents, and to develop scientific knowledge, offer engineering methodologies, and solve cross-disciplinary problems.

Mission

To serve as a platform for merging individual technologies together and implement their integrated functionality at the systems level, and to disseminate impactful technologies to the Greater Bay Area and explore relevant industrial or societal applications.

The Systems Hub hosts a cluster of cross-disciplinary thrust areas in Bioscience & Biomedical Engineering (BSBE), Intelligent Transportation (INTR), Robotics & Autonomous Systems (ROAS), and Smart Manufacturing (SMMG). Based on the fundamental research in various technical fields, the Systems Hub will facilitate the integration of multidisciplinary technologies and explore their applications. In addition to theoretical framework and experimental validation, computational modeling and simulation will be emphasized as well. Research highlights of the Systems Hub include, but are not limited to, molecular medicine and implanted devices, information fusion from multiple traffic sensing modalities, personal assistive robotics and human-robot interaction, implementation of Industry 4.0 and additive manufacturing.

Dean



Prof. Ricky Shi-Wei LEE

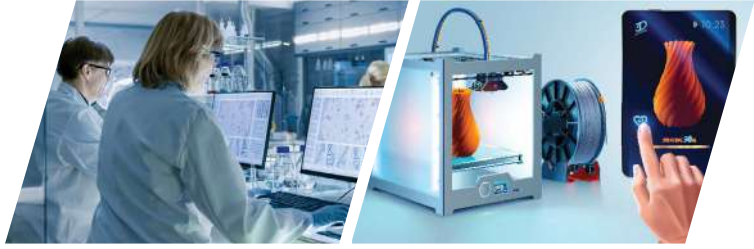
Chair Professor

Dean of Systems Hub, HKUST(GZ)

Research Interest

- **Additive Manufacturing**
- **Heterogeneous Integration**
- **Packaging of Microsystems**
- **Electronics and Optoelectronics Packaging**

Prof. Ricky Lee received his PhD degree in Aeronautical & Astronautical Engineering from Purdue University in 1992. After one year of post-doctoral research at Purdue, he joined the Hong Kong University of Science & Technology (HKUST). During his career of tenure-track faculty at HKUST, Dr Lee once was on secondment to serve as Chief Technology Officer of Nano & Advanced Materials Institute for two and a half years. Currently Dr Lee is Chair Professor of Smart Manufacturing Thrust and Acting Dean of Systems Hub at the HKUST Guangzhou Campus HKUST(GZ). He also has concurrent appointments as Executive Director of Shenzhen Platform Development Office, Director of Electronic Packaging Laboratory, and Director of Foshan Research Institute for Smart Manufacturing at HKUST. Dr Lee has been focusing his research on the technology development for electronics/optoelectronics packaging and additive manufacturing. The topics of his R&D interests include wafer level packaging and heterogeneous integration, 3D printing for microsystems packaging, LED packaging for solid-state lighting and applications beyond lighting, lead-free soldering and reliability analysis. The research outcomes of Dr Lee's group have been documented in numerous technical papers in international journals and conference proceedings. He also co-authored 4 books and 10 book chapters. Due to his technical contributions, Dr Lee has received many honors and awards over the years. In addition to being the recipient of 15 best/outstanding paper awards and 7 major professional society awards, Dr Lee is Fellow of IEEE, ASME, IMAPS, and Institute of Physics (UK). He is also Editor-in-Chief of ASME Journal of Electronic Packaging.



Student Sharing

The study and research experience of the co-supervisor scheme allows students with interdisciplinary backgrounds to work collaboratively, ideally suited for changing trends in research around the world.

Qianwen XU from Jiangxi, China

PhD Student in Smart Manufacturing



Students can benefit from vital experience in multi-disciplinary engineering fields and developing a unique study plan, while cutting-edge facilities and exposure provided by supervisors help to build a research career.

Don Pubudu Vishwana Joseph JAYAKODY from Sri Lanka

MPhil Student in Smart Manufacturing

The supervision, which is thorough and broad-based, comprises experts across several pertinent fields. I believe I am being set up for a career in solving modern problems using unconventional but more effective ways, as the world is increasingly becoming multidisciplinary in its approach to dealing with the challenges of the 21st century.

OGEDENGBE Ikeoluwa Ireoluwa from Nigeria

PhD Student in Intelligent Transportation



Our program has world-class professors, fantastic education facilities and resources. During my PhD journey, learning and research experience is the highlight. It may be challenging, but I will never regret this decision!

Lin YU from Hunan, China

PhD Student in Intelligent Transportation

Systems Hub - Thrust Areas

Bioscience and Biomedical Engineering

With the vision to establish world-class research and education, the Thrust aims to develop a multidisciplinary program with the strategic priorities listed below. Researchers in this Thrust apply science and engineering principles to advance knowledge and applications in these research areas. The Thrust will also embrace new research areas with profound impacts on Bioscience and Biomedical Engineering in future development.

Cross-disciplinary Focus Areas

- Neuroscience and intelligence technology
- Stem cell biology
- Synthetic biology
- Cell and tissue engineering
- Biomaterials science
- Bioinformatics and computational biology



Prof. Robert Zhong QI

Professor

Head of Bioscience &
Biomedical Engineering Thrust,
Systems Hub

Research Interest

- Cell biology
- Cytoskeletal dynamics
- Cellular and molecular mechanisms
- Cancer
- Molecular and cellular neuroscience

Intelligent Transportation

INTR aspires to develop cutting-edge technologies that integrate transportation, communications and networking, artificial intelligence, and data science for operations and management of multi-modal transportation systems. The key aim is to enhance the efficiency, safety, and sustainability of mobility for both people and goods.

Cross-disciplinary Focus Areas

- Big data for transportation and mobility
- Shared mobility, mobility as a service (MaaS)
- Connected and autonomous vehicles (CAV)
- Integrated sensing, communications and computing for transportation
- Operation and management of urban rail transit systems
- Safety and efficiency of unmanned aerial vehicles (UAV)
- Green aviation technologies
- Automated port operations and shipping logistics
Transportation Electrification



Prof. Liuqing YANG

Chair Professor

Acting Head of Intelligent
Transportation Thrust,
Systems Hub

Research Interest

- Multi-entity intelligence in transportation and energy systems
- Synergy of communications, sensing, and information processing
- Theory and applications of wireless communications and networking

Robotics and Autonomous Systems

This thrust area examines technologies used to develop machines that can substitute and replicate human actions. It studies integrative systems that deal with design, construction, operations, as well as the control element for sensing, feedback, and data processing- aiming to perform intended tasks with a high degree of autonomy.

Cross-disciplinary Focus Areas

- Autonomous Driving and Systems
- Robotic Manipulation and Grasping
- Personal Assistive Robotics and Human Robot Interaction
- Robotics and Autonomous Systems for Construction and Agriculture
- Swarm/Collective Robotics
- Unmanned Aerial Vehicle Systems
- Integration of Robotics and AI
- Robotic Arts



Prof. Ming LIU

Associate Professor

Head of Robotics &
Autonomous Systems Thrust,
Systems Hub

Research Interest

- Robotics
- Dynamic environment modeling
- 3D mapping
- Machine learning and visual control

Smart Manufacturing

This Thrust area focuses on computer-integrated manufacturing with high levels of adaptability and agile design optimizations, digital information and data analytics to promote more flexible technology productivity. SMMG aims at developing and integrating interoperable systems, multi-scale dynamic modeling and simulation, intelligent automation, multi-axis machining and additive manufacturing processes, dynamic manufacturing process detection technologies and other fundamental research involving smart manufacturing.

Cross-disciplinary Focus Areas

- Industry 4.0
- Smart Sensors, Automated Optical Inspection, Location Detection Technologies
- Multi-axis Precision Machining
- Digital Manufacturing
- Additive Manufacturing and Hybrid Manufacturing
- Industrial Data Analytics
- Industrial Internet of Things
- Integration of Embedded Systems
- Advanced Human-Machine Interfaces



Prof. Kai TANG

Professor

Head of Smart
Manufacturing Thrust,
Systems Hub

Research Interest

- CAD/CAM
- Multi-axis Machining
- Multi-axis Additive Manufacturing
- Hybrid Manufacturing

Enquiries

Bioscience and Biomedical Engineering
Intelligent Transportation
Robotics and Autonomous Systems
Smart Manufacturing

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Submit Your Application @ <http://fytgs.hkust-gz.edu.cn/how-apply>



Admission Requirements @ <http://fytgs.hkust-gz.edu.cn/adm-req>

To qualify for admission to the University, applicants should have:

- Obtained a **bachelor's degree** from a recognized institution, or an approved equivalent qualification;
- For PhD applicants (additional to the above): a proven record of outstanding performance from a recognized institution or presented evidence of satisfactory work at the postgraduate level on a full-time basis for at least one year, or on a part-time basis for at least two years;
- Fulfill the **English language requirements** with one of the following proficiency attainments¹:

Proficiency Test	Minimum Score
TOEFL – Internet-based Test (iBT)	80 (in one single attempt)
TOEFL – Paper-based Test (pBT)	550
TOEFL – Revised Paper-delivered Test	60 (total scores for Reading, Listening and Writing sections)
IELTS (Academic Module)	Overall score: 6.5 and all sub-scores: 5.5

¹ You are not required to present TOEFL or IELTS score if your first language is English, or your bachelor's degree (or equivalent qualification) was awarded by an institution where the medium of instruction was English.

- Met program-specific admission requirements, if any.




State-of-the-Art
Research Institutes



Cross-Campus
Study Opportunities

For more programs offered at HKUST(GZ),
please refer to <http://fytgs.hkust-gz.edu.cn/programs>.



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For the most up-to-date information, please refer to hkust-gz.edu.cn.



The Hong Kong University of Science and Technology (Guangzhou)



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