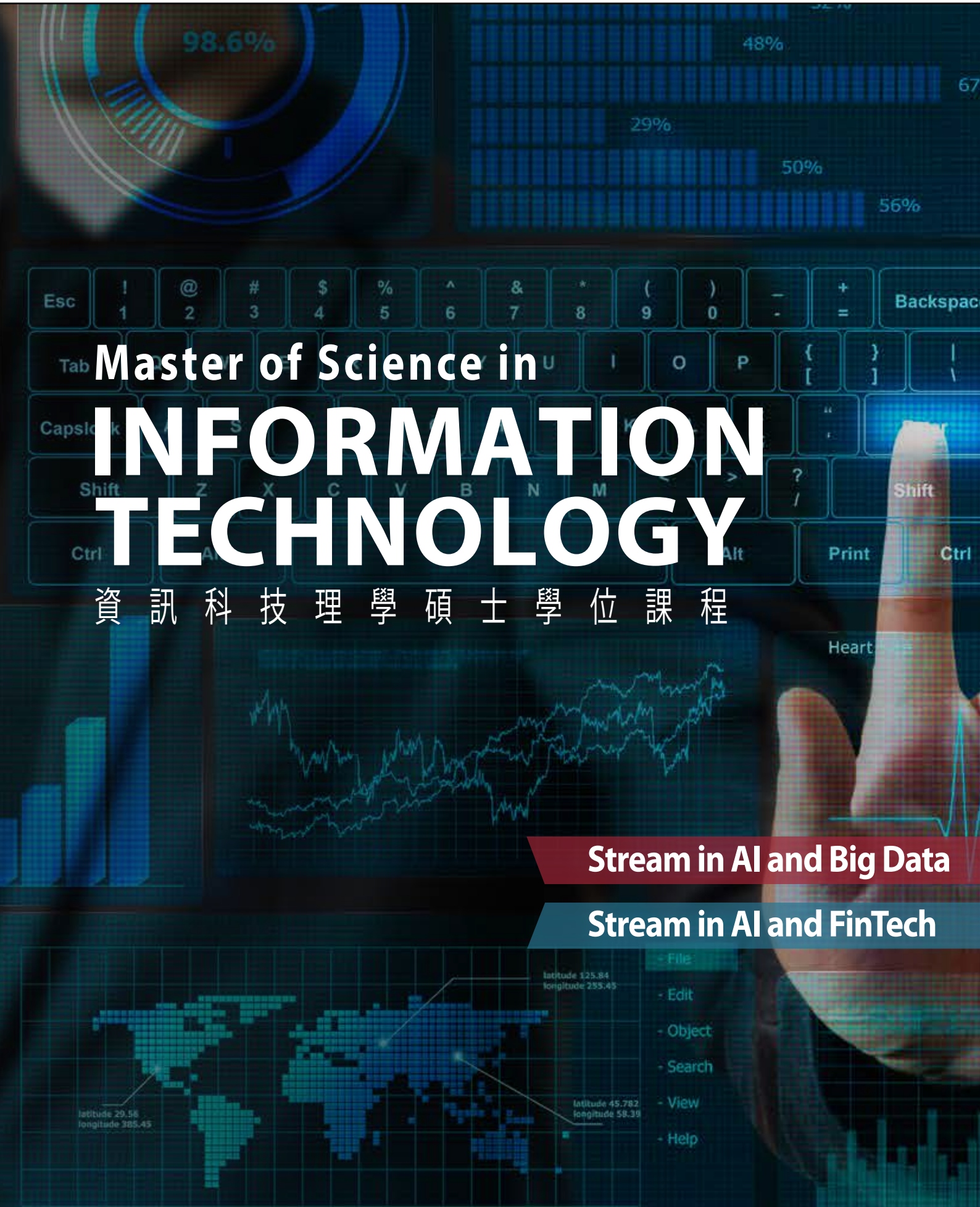
THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

Department of Computing
電子計算學系



Master of Science in INFORMATION TECHNOLOGY

資訊科技理學碩士學位課程

Stream in AI and Big Data

Stream in AI and FinTech

ABOUT DEPARTMENT OF COMPUTING

The Department of Computing (COMP) has a proud history of over 45 years. It was established in 1974 as one the pioneers offering computing education in the territory, nurturing professional talents to support the society's advancement. Today, COMP has gained international recognition in world-class research and high quality education. It is ranked 26th in Computer Science in the "2022 Best Global Universities Rankings" by the U.S. News and World Report and 64th in the "Times Higher Education (THE) World University Rankings 2022" in Computer Science.

COMP Research Open Day

Our Master of Science in Information Technology (MScIT) programme is a science- and technology-based programme tailored to nurture Mathematics, Information Systems, Engineering, or other Science graduates to become IT professionals and to enrich Computing/ Computer Science graduates with advanced knowledge and skills in the important areas, especially Artificial Intelligence (AI), Big Data, and Financial Technology (FinTech).

PROGRAMME FEATURES

1. Facilities

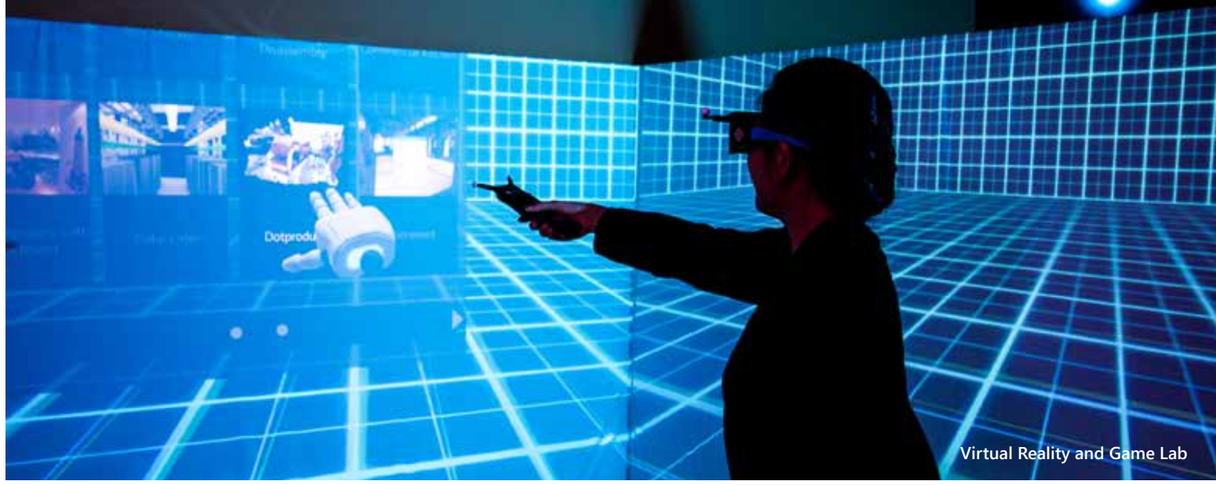
The University Research Facility in Big Data Analytics (UBDA) is the first university-wide research facility in big data analytics among universities in Hong Kong. It is equipped with big data expertise and the most advanced computing infrastructure for cross-disciplinary research collaborations and education.

At COMP, we have laboratories not only supporting research activities but also teaching and learning as well as knowledge transfer purposes.

- University Research Facility in Big Data Analytics (UBDA)
- Research Centre on Data Science and Artificial Intelligence (RC-DSAI)
- Biometrics Research and Innovation Centre (BRIC)
- PolyU-Yonyou Joint Laboratory on Smart Cloud Computing
- FinTech and Cyber Security Lab (FCSL)
- Internet and Mobile Computing Lab (IMCL)

UBDA Infrastructure

Students undertaking projects and dissertations will have the opportunity to access other resources such as the Virtual Reality and Game Lab and the Big Data and Cloud Computing Platform.


Virtual Reality and Game Lab

COMP Open Forum

2. Practicality

Programming workshops are designed to enhance students with limited programming knowledge to master their studies in MScIT. Training and seminars on other topics including AI, Blockchain and Machine Learning will also be arranged to strengthen students' technical skills and keep them in pace with the technology development.

3. Flexibility

We offer both full-time and part-time mode of study, with the combination of a dissertation, a project and subjects of equivalent credits available for students to choose. Besides, students enjoy the flexibility to obtain a MScIT degree with stream(s) or without stream if they fulfil the stream requirements.

- **Stream in Artificial Intelligence and Big Data**
- **Stream in Artificial Intelligence and Financial Technology**

4. Networking

With an environment of broad student mix, our students benefit from interaction with their peers in exchanging ideas and sharing experiences. COMP also maintains an extensive network of MSc alumni, students can acquire both advanced expertise and professional networks that help them scale new heights in their careers.

PROGRAMME STRUCTURE

Students can select from a range of subjects offered under the programme. In general, each subject takes place once a week in the evening over a 13-week semester. Full-time students normally take 4 subjects in a semester, whereas part-time students usually take 2 subjects in a semester.

Mode of study

This is a mixed mode programme that students may pursue their studies either in full-time or part-time mode.

Award requirements

To fulfil the graduation requirement, students can choose to study a MScIT degree with stream(s)# or without stream by taking the required subjects.

Programme Core subjects: P-Core
Stream Core subjects: S-Core

Awards	MScIT with Stream in Artificial Intelligence and Big Data#	MScIT with Stream in Artificial Intelligence and Financial Technology#	MScIT
With Dissertation	3 P-Core + 4 S-Core + 1 Dissertation		3 P-Core + 4 Electives* + 1 Dissertation
With Project	3 P-Core + 4 S-Core + 1 Elective* + 1 Project		3 P-Core + 5 Electives* + 1 Project
Without Dissertation or Project	3 P-Core + 4 S-Core + 3 Electives*		3 P-Core + 7 Electives*
Credit Requirement	30		30

*Students can take elective subjects (see the next page) to satisfy their elective requirements.

#The streams will not form a part of the official award parchment. Upon completion of stream(s), students can apply for a separate certificate.

P-Core Subjects

- Data Structures and Database Systems
- Software Engineering and Development
- Internet Infrastructure and Protocols

S-Core Subjects

Stream in AI and Big Data

- Artificial Intelligence Concepts
- Big Data Computing
- Machine Learning and Data Analytics
- Computer Vision and Image Processing

S-Core Subjects

Stream in AI and FinTech

- Artificial Intelligence Concepts
- Financial Computing
- Cyber and Internet Security
- Distributed Ledger Technology, Cryptocurrency and E-Payment

List of subjects

While every stream has its own group of core subjects, a range of electives is offered depending on the availability of teaching resources and the number of registered students. Students are allowed to choose from a common pool of electives within the Department of Computing, subject to vacancies available.

All subjects below bear three credits unless otherwise stated and they are subject to review and changes.

Programme Core subjects: P-core
Stream Core subjects: S-core
Elective subjects: E

Project-based Subjects

- Independent Study
- IT Startup: From Idea to Business Plan
- Project 6 credits
- Dissertation 9 credits

Elective Subjects

- Advanced Data Analytics
- Optimization and Applications
- Natural Language Processing
- Human Computer Interaction
- Wireless Networking and Mobile Computing
- Software Project Management
- Internet Computing and Applications
- Multimedia Computing, Systems and Applications

Supplementary Elective Subjects offered by other PolyU Departments

- Principles of Corporate Finance
- Investments
- Applications of Computing and Technology in Accounting and Finance I
- Business Analytics in Accounting and Finance
- Graphs and Networks
- Forecasting and Applied Time Series Analysis
- Investment Science
- IoT – Tools and Applications

OUR STRONG TEAM

1. Artificial Intelligence and Robotics

Dr CHUNG Fu Lai Korris
PhD(CUHK); MIEEE

Prof. HOORN Johan
PhD(D. Litt.); PhD(D. Sc.) (Vrije University Amsterdam)

Dr HU Chuang
PhD[PolyU(H.K.)]

Prof. TAN Kay Chen
PhD(Glasgow); FIEEE

Dr LI Ping
PhD(CUHK)

Dr WU Xiaoming
PhD(Columbia)

Dr LIN Wanyu
PhD(Toronto); MIEEE

Dr XU Wenchao
PhD(Waterloo); MIEEE

Dr LIU Yan Fiona
PhD(Columbia)

2. Cyber Security and Privacy

Dr DE CARNE DE CARNAVALET Xavier
PhD(Concordia)

Dr GAO Shang Jason
PhD[PolyU(H.K.)]

Dr LUO Xiapu Daniel
PhD[PolyU(H.K.)]; MIEEE

Prof. XIAO Bin
PhD(UT Dallas); SMIEEE; MACM; MCCF

Dr XUE Lei
PhD[PolyU(H.K.)]

Dr YU Le
PhD[PolyU(H.K.)]

Dr ZHANG Mengyuan
PhD(Concordia)

Dr ZHENG Yuanqing
PhD(NTU); MIEEE; MACM

3. Data Science, Information Retrieval and HCI

Dr FAN Wenqi
PhD(CityU)

Dr HUANG Xiao
PhD(TAMU)

Dr LEONG Hong Va
PhD(California); MACM; MIEEE

Prof. LI Qing
PhD(USC); FIET/IEE; DMCCF; SMIEEE

Dr LUK Wing Pong Robert
PhD(Southampton); FBCS; SMACM; SMIEEE; CEng; CITP

Dr NGAI Grace
PhD(Johns Hopkins)

Dr SHI Jieming
PhD(HKU)

Dr YIU Man Lung Ken
PhD(HKU)

Dr ZHANG Chen Jason
PhD(HKUST)

Dr ZHOU Kai
PhD(Michigan State)

4. Fundamentals & Software

Dr CAO Yixin
PhD(TAMU); MACM; MCCF; MSIAM

Dr JANSSON Jesper
PhD(Lund)

Dr LI Bo
PhD(SBU)

Dr LYU Mingsong
PhD(NEU); MIEEE

Dr PEI Yu Max
PhD(Nanjing); PhD(ETH Zurich)

Dr WANG Qixin
PhD(UIUC)

5. Networking and Mobile Computing

Prof. CAO Jiannong
PhD(Washington State); FIEEE; DMACM; DMCCF

Dr CHAN Chun Bun Henry
PhD(British Columbia); MIEEE

Prof. GUO Song
PhD(uOttawa); FIEEE; DMACM

Dr LOU Wei
PhD(Florida Atlantic); MIEEE

Dr SAXENA Divya
PhD (IIT Roorkee); MIEEE; MACM

Dr SHEN Jiaxing
PhD[PolyU(H.K.)]

Dr WANG Dan
PhD(Simon Fraser)

Dr XIA Xianjin
PhD(NPU); MIEEE; MACM

Dr XU Linchuan
PhD[PolyU(H.K.)]

Dr YANG Lei
PhD(Xi'an Jiaotong)

6. Vision, Language & Graphics

Prof. CHEN Changwen
PhD(UIUC); FIEEE; FSPIE

Dr LI Jing Amelia
PhD(CUHK)

Prof. LI Wenjie Maggie
PhD(CUHK); MACM

Dr LI Chen Richard
PhD(CityU)

Prof. PATHAK Ajay Kumar
PhD(HKU); FIAPR; FIEEE

Dr YANG Bo
DPhil/PhD(Oxford)

Prof. YOU Jia Jane
PhD(La Trobe); Dip(Beijing Foreign Language); MIEEE

Prof. ZHANG Lei John
PhD(Northwestern Polytechnical); FIEEE

ADMISSION REQUIREMENTS

- Applicants should possess a Bachelor's degree in Computing / Computer Science, Mathematics, Information Systems, Engineering, or other Science disciplines. Applicants with a Bachelor's degree in other disciplines with at least five years significant IT relevant work experience will also be considered.
- If you are not a native speaker of English, and your Bachelor's degree or equivalent qualification is awarded by institutions where the medium of instruction is not English, you are expected to fulfil the following minimum English language requirement for admission purpose:
- A Test of English as a Foreign Language (TOEFL) score of 80 for the Internet-based test or 550 for the paper-based test; OR
- An overall Band Score of at least 6 in the International English Language Testing System (IELTS).

More information can be found at **www.polyu.edu.hk/study**.

How to apply

To apply for the programme, applicants can submit their application via an online admission system at **www.polyu.edu.hk/admission** starting from late September. This programme has a quota for admission therefore early application is strongly encouraged.

Programme code: 61030

Tuition fee

Local students:
HK$5,300 per credit

Non-local students:
HK$5,500 per credit

Department of Computing

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