THE UNIVERSITY OF HONG KONG (HKU)

Something about HKU

- **Renowned Tradition**
  - Hong Kong's first tertiary institution since 1912
- **International Recognition**
  - The latest QS (Quacquarelli Symonds) World University Ranking 2021 placed HKU as the 22nd ranked university in the world.
- **Academic Excellence**
  - Top-tier academic and research staff from around the world
- **Cross-Cultural Exposure**
  - Mix of international faculty and students
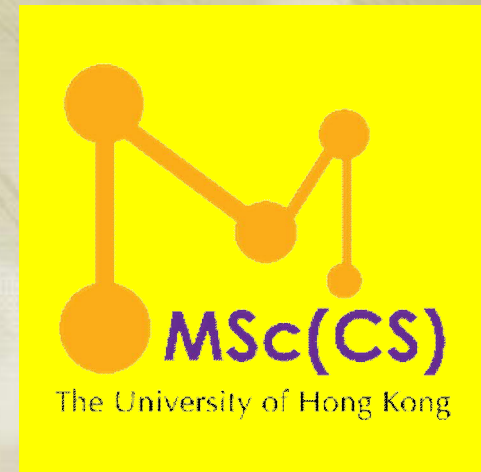 - English-speaking university

Department of Computer Science (HKUCS)
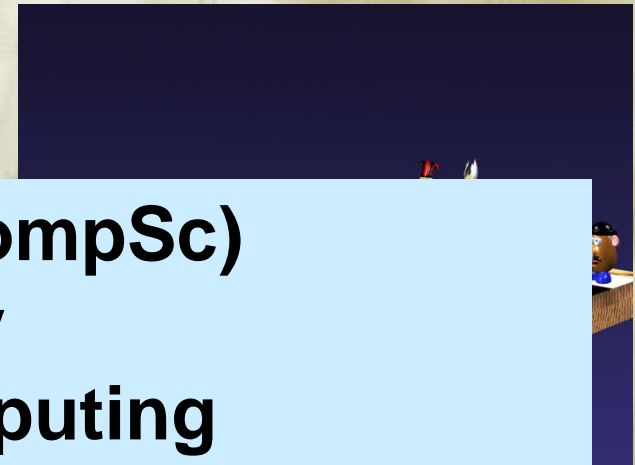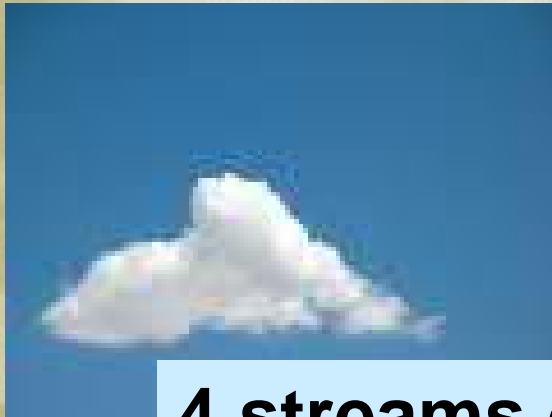
HKUCS Postgraduate Programmes

- MPhil/PhD
- MSc in Computer Science
- MSc in Electronic Commerce and Internet Computing
- MSc in Financial Technology and Data Analytics
- Master of Data Science
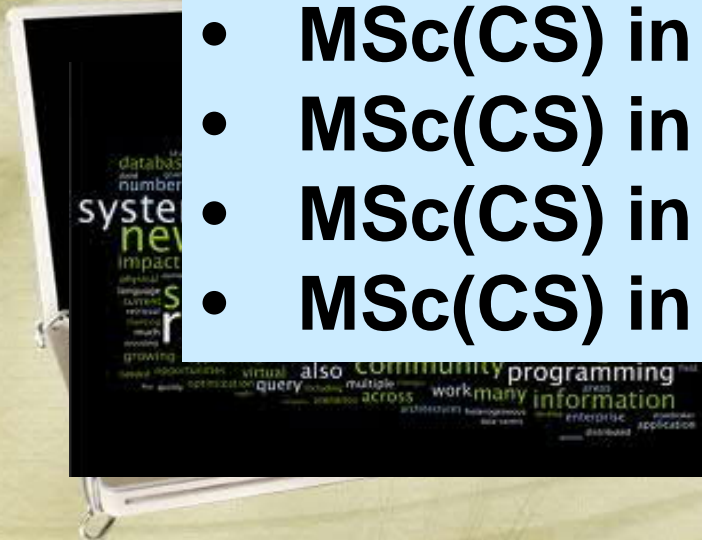
MSc(CS) Areas of Specialization

4 streams of study in MSc(CompSc)
- MSc(CS) in Cyber Security
- MSc(CS) in Financial Computing
- MSc(CS) in Multimedia Computing
- MSc(CS) in General Stream

Our Programme Team

Dr KP Chow
Programme Director

Professor CL Wang
Deputy Director

Professor SM Yiu
Associate Director

Dr Dirk Schnieders
Associate Director

Dr Loretta Choi
Associate Director

Highlights of different streams of the Programme

- Our programme trains students professional skills; emphasizes on hands-on ability
(不是空谈理论, 纸上谈兵)
- Companies like our graduates very much (multiple offers; about 100% employment rate)
- Solid foundation for further research

MSc(CS) Degree – Complete 72 credits

- **Enrolment modes:**
  - **Project Mode**
    Courses (60 Credits) + Project (12 Credits)
       i.e. 10 Courses + Project
    or
  - **Dissertation Mode**
    Courses (48 Credits) + Dissertation (24 Credits)
       i.e. 8 Courses + Dissertation

  Project: Case study, System development, Industrial projects (offered by research institutes or industry partners)

  Dissertation: Research-based projects

1-2 years Full-Time
2-3 years Part-Time

- Length of study:
  - Full time (Project Mode): 3 semesters (Sept 2021 - Aug 2022)
  - Full time (Dissertation Mode): 5 semesters (Sept 2021 - May 2023)
  - Part time: 6 semesters (Sep 2021 to Aug 2023)

- 3 semesters in 1 year:
  - Semester 1 (Sep to Dec)
  - Semester 2 (Jan to May)
  - Summer semester (Jun to Aug)

Introduction to different streams of the Programme

MSc(CS) in Financial Computing

Our programme focuses on FinTech (Financial Technology)

Our graduates are able to do the followings

- Algo-trading (write s/w to do automatic stock selection & trading: quantitative to high-frequency trading)
- Pricing & Risk assessment (evaluate the risk & set a price for a financial product)
- IT Infrastructure design and implementation for a financial or investment company
- Big data analytics for financial data
- Blockchain (platform & applications development)
- Security (fraud identification and investigation)

…………..

Who are the teachers?

- Peter Ng: Deutsche Bank, BNP Paribas
- Jingrui Zhang: Genesis Capital Group Limited
- C.D. Shum: JP Morgan Chase Bank
- J.H. Rahmel (HSBC)

Professionals from industry

Sorry, I don't have any background in finance, can I join the Financial Computing Stream?

No problem! We offer **Introduction to Financial Computing**

Basic and Advanced Financial Computing Courses

- Introduction to financial computing
- Securities transaction banking
- Techniques in computational finance
- Software development for quantitative finance
- Distributed ledger and blockchain technology
- Introduction to cyber security
- Data mining
- Financial fraud analytics

MSc(CS) in Multimedia Computing

Multimedia computing Stream

- There is a growing demand in the Hong Kong and China industry for multimedia computing professionals

- In this stream you will gain theoretical and practical skills that will enable you to develop innovative and creative multimedia computing technologies

Focus

- Multimedia Computing Courses:
    - Multimedia technologies
    - Visualization and visual analytics
    - Image processing and computer vision
    - Smart phone apps development
    - Game design and development

- Dissertation:
    - Students will work on a dissertation and develop innovative ideas using latest development in technology, such as mobile devices and big data analytics

Multimedia Facilities

- MSc(CS) Multimedia Laboratory [MM Lab]
- State of the art high-spec computing and specialized multimedia equipment
- GPU Farm
- 24h access for Multimedia Computing Stream students

MSc(CS) in Cyber Security

WHY WE'RE THE BEST

Highlights of our stream – What make us different from others

What you expect to learn from this stream?
- Cryptography
- Basics of computer/network security
- Advanced topics: wireless/cloud/big data security

Common to almost all master programmes focused on information security.

♫ Practical hacking and defense

State-of-the-art Cyber security lab!

Hacking/Defence Tools:
-Password cracking tools
-Key logger
-Social network hacking tools
-Windows/games hacking tools

General Stream

You can take ALL courses offered by the three specialized streams (Cyber Security + Financial Computing + Multimedia Computing)

| COMP7103	Data Mining
COMP7201	Analysis and Design of Enterprise Applications
COMP7305	**Cluster and Cloud Computing**
COMP7404	**Computational intelligence and machine learning**
COMP7506	Smart Phone Apps Development
COMP7606	**Deep Learning**
COMP7801	Topic in computer science
COMP7802	Introduction to financial computing

HKU/CS COMP7305: DIY "Cloud"

High-end

LG-104

PCs at LG-104

Fixing problems at LG-104
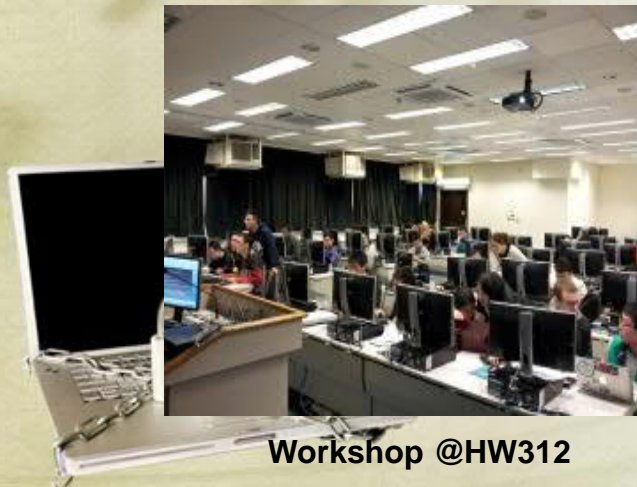
Workshop @HW312

Workshop @HW312

HP2920 SDN Switch (OF1.3) @HW305

COMP7305 Course Projects

- *Risk Management of Stock Prediction by Monte Carlo Simulation* **(PySpark)**

- *Web TV based on Twitter Hot-topic* **(Spark MLlib)**

- *Fly Piggy* (Hive, HBase)

- *Analyzing Twitter Data Using Apache Hadoop* **(Spark)**

- *Twitter Analysis with Cloud Technologies* **(Spark SQL)**

- *Find the most similar people using Apache Hadoop*

- *Prediction of Stock Price* *using Artificial Neural Network* **(Spark MLlib)**

- *Analyzing Financial Data using Hive*

- *Better Flight, Better Life* **(Spark SQL, MLlib)**

- *New York Taxi Data Analysis Using* *Apache Spark*

- *Airline Delay Crystal Gazer* **(Spark MLlib)**

- *Ecommerce Business Helper* **(Spark and Spark MLlib)**

- *Gingko Academic Scholar* **(Spark SQL)**

- *What's Meow ? Image Recognition on Spark Cluster* **(Spark MLlib)**

- *Fashion Clothes Recommendation*

- *Find the Study Gods*
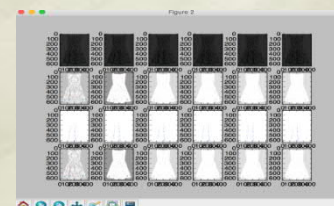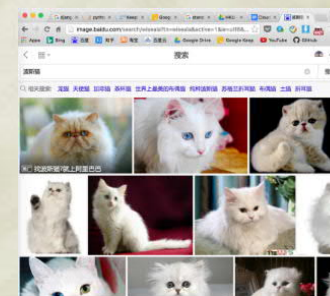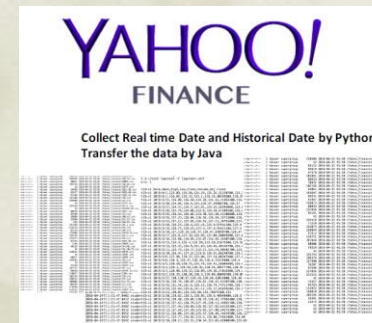
Our Students

MSc students involving in industrial projects

Our project team (two research students, two MSc students) – visiting Huawei Singapore

A team of PhD, MSc, undergraduate students in an industrial training session – Smart Contract & Blockchain Programming for cybercurrencies (e.g. bitcoin)

What our Graduates Say

Mr. Matthew Clark (Class of 2017)
"…The coursework was challenging yet fulfilling, and topics were relevant for today's fast-changing world. I have been able to work with cutting-edge robotic systems during my dissertation project, and I am excited to begin a new career in the technology field armed with my MSc from HKU."
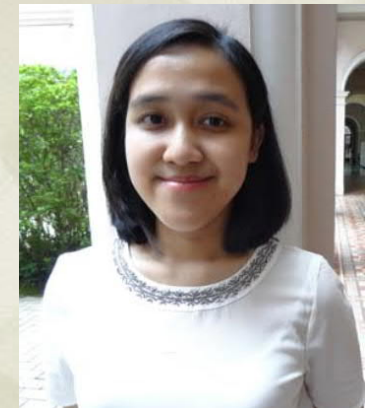
Miss Karina Vidyantiningrum (Class of 2018)
"I was very excited when I came across MSc in Computer Science programme at HKU. Not only does the Programme offer a lot of interesting courses in IT, it also provides a stream of my interest: Financial Computing stream. Throughout the course of my study, I was exposed to courses which not only are useful in the field of Fintech but also introduce very relevant knowledge to recent industries' needs. The faculty members whom I was taught and supervised by were knowledgeable and resourceful."

Some of the companies which our graduates are working in:

- Bank of China
- HSBC
- Credit Suisse HK Limited
- Meituan Dianping
- Bank of China (Hong Kong)
- Microsoft
- Amazon
- Jones Lang LaSalle Limited
- Alibaba Group
- JPMorgan Chase & Co
- and more ...

Admission
Important Information

2020 Admission

- **Total number of applicants: > 1900**
- Number of students admitted: 201
  - 119 Full-time
  - 82 Part-time
- Academic performance: at least 2A (GPA 3.0 or 80 marks)
- Undergraduate degrees: mostly CS

Admission Requirements

- A Bachelor's degree with honours, or an equivalent qualification

- For applicants graduating from universities not using English as a teaching medium
  - English Language Proficiency Requirement
  - **TOEFL** : **550** or above (paper-based test) or **80** or above (internet-based test)
  - **IELTS**: a minimum overall band of **6** with no subtest lower than **5.5**

Admission Procedures

- Online application **ONLY**:

  ## http://hku.hk/tpg/

- Application deadlines:

	Main Round	Clearing Round
MSc(CompSc) / MSc(ECom&IComp)	31 Dec 2020	**15 Apr 2021**

Composition Fees
(2021 intake)

- Courses: HK$13,000$^{\#}$/course
- Project: HK$26,000 $^{\#}$
- Dissertation: HK$52,000$^{\#}$
- Total tuition fee = HK$156,000$^{\#}$

Subject to University's approval

Scholarships

We offer scholarships to attract and reward the best students. All scholarships shall be awarded on the basis of academic merit and personal qualities. The number and the value of each scholarship shall be determined by the Selection Committee based on the funds that are available in each year.

- The China Postgraduate Scholarships for Computer Science
- International Postgraduate Scholarship for Computer Science
- Master of Science in Computer Science Hong Kong Scholarship
- HKU-SCF Scholarship in Financial Technology

Details can be found at:

https://www.msc-cs.hku.hk/Admission/Fees#scholarships

Targeted Taught Postgraduate Programmes Fellowships Scheme

Introduced by the HKSAR Government with the aim to attract meritorious local students to pursue further studies in priority areas conducive to the strategic development of Hong Kong.

Eligibility: Local students who are admitted to the Master of Science in Computer Science (full-time or part-time) will be eligible

Award: around HK$120,000 to each successful student

Places: 9 for MSc(CompSc) in 2021-22

Application: Eligible applicants who are admitted to the Master of Science in Computer Science will be invited by the Programme Office to submit applications for the Fellowships Scheme in due course

Our Mission

- To deliver the best e-commerce and Internet computing Master-level programme
- To bridge between technology and business
- To meet the demand of the mature students with a state-of-the-art in curriculum
- To build a growing community and network of e-commerce professionals in various businesses & occupations for Hong Kong & China

The Programme Management Team

- Dr KP Chow – Programme Director
- Professor CL Wang – Associate Programme Director
- Professor Paul Cheung – Project Coordinator
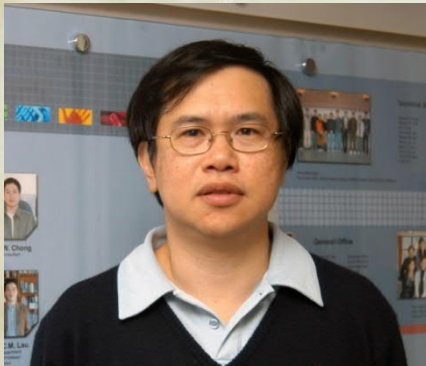
How We Make a Difference

- **First of its kind in Hong Kong since 1999**
  - We have attracted the cream of the applicants to build a solid foundation

- **International and Responsible Faculty**
  - About half of our instructors are overseas experts knowledgeable about the latest developments in global e-business
  - All instructors are subject experts with understanding of business applications of Internet and communication technologies
  - All instructors take their teaching responsibility seriously to enthuse and interest you

MSc Degree – Complete 72 credits

- **Enrolment modes:**
    - 10 Courses (60 Credits) ^ + Case Study Project (12 Credits)
        or
    - 8 Courses (48 Credits) ^ + Dissertation (24 Credits)

    ^ Each course normally carries 6 credits.

Curriculum - Discipline courses
At least 4 out of 8 Fundamental courses

ECOM6004	Legal aspects of IT and e-commerce
ECOM6008	Supply chain and e-logistics management
ECOM6013	E-commerce technologies
ECOM6029	E-business transformation
ICOM6012	Internet infrastructure technologies
ICOM6034	Website engineering
ICOM6045	Fundamentals of e-commerce security
ICOM6046	Semantic data architecture

Curriculum - Discipline courses
Any combinations of your choice

ECOM 6004	**Legal aspects of IT and e-commerce**
ECOM 6008	**Supply chain and e-logistics management**
ECOM 6013	**E-commerce technologies**
ECOM 6029	**E-business transformation**
ICOM 6012	**Internet infrastructure technologies**
ICOM 6034	**Website engineering**
ICOM 6045	**Fundamentals of e-commerce security**
ICOM 6046	**Semantic data architecture**

ECOM 6014	**E-marketing**
ECOM 6023	**E-financial services**
ECOM 7122	**Entrepreneurship development and FinTech ventures in Asia**
ECOM 7124	**Mobile and IoT computing services and applications**
ICOM 6044	**Data science for business**
COMP 7404	**Computational intelligence and machine learning**
COMP 7802	**Introduction to financial computing**
FITE 7410	**Financial fraud analytics**

ECOM 6016	**Electronic payment systems**
ECOM 7121	**Dynamic digital capabilities**
ECOM 7123	**Building smart cities: an information system approach**
ICOM 6027	**E-crimes: digital crime scenes & legal sanctions**
ICOM 7125	**Digital forensics**
COMP 7407	**Securities transaction banking**
COMP 7901	**Legal protection of digital property**

* The curriculum is subject to review every year. New courses may be added to the curriculum and some courses may be removed. Some courses are only offered in alternate years.

Cross-curriculum enrolment

- *May select up to 12 credits of elective courses (i.e. normally 2 courses) from other taught-postgraduate programmes in the Faculty of Engineering, e.g. MSc(CompSc), MSc(Eng)(EEE)*
- *Subject to approval by the directors of the home programme and the offering programme*

Capstone Requirement

- All students would have to enrol in either a Case Study Project (ECOM7001) or a Dissertation (ECOM7000)
- Normally the project starts after the student has completed at least 2 courses of the degree
- All projects should commence in the second semester of an academic year

Project Type	Full-Time Students	Part-Time Students
Case Study Project	2 – 3 semesters	3 – 5 semesters
Dissertation	3 – 5 semesters	5 – 8 semesters

CISC

Case Study Project

12 credits (equivalent to 2 courses)

- Designed for students interested in real E-Commerce experience and integration of what have been learned
- Work on an innovative E-Commerce business plan and try to execute the plan as a genuine company
- Work in group of 4 (nominal, min 3 - max 5)

Dissertation

24 credits (equivalent to 4 courses)

- Designed for research-oriented students with a suitable background to work on a substantive, in-depth dissertation of a Master-degree level, in an area of E-Commerce technology or business topic
- Self-proposed individual project

CISC

Words from our graduates

Vincent Chung (Class of 2020)
System Analyst, Speedy Group Corporation Limited
"I chose to study in MSc(ECom&IComp) because the programme allows me to customize my own course profile based on my interest. If you are already a tech-savvy, you might consider taking more ICOM courses or some CS electives to challenge your problem solving skills and broaden your technical knowledge. The Case Study Project impressed me most with this programme. I enjoy thinking about different creative and feasible ideas, then select the best one with my teammates and turn it into reality. "

Adrian Darmansyah (Class of 2020)
Engineer, ARUP
"I would recommend this programme to the prospective students who are keen to discover unique approaches particularly in adoption of transformative technologies. To those who have accepted the offer to enter the programme, I would highly encourage taking the more challenging courses offered within this programme, as they are rewarding and well worth your time and effort.

Shizhu Wang (Class of 2020)

"The most amazing part of HKU MSc(ECom&IComp) programme is its wide spectrum of topics covering the most updated technologies and applications around the globe. All lectures are well designed, prepared and given by domestic or overseas experienced professors.."

Programme Fees

- Each 6-credit course: HK$13,000
- Case Study Project: HK$26,000
- Dissertation: HK$52,000

- Total composition fee for the two enrolment modes:
  - 10 courses + Case Study Project:
    (HK$13,000 x 10) + HK$26,000 = HK$156,000
  - 8 courses + Dissertation:
    (HK$13,000 x 8) + HK$52,000 = HK$156,000

2020 Admission

- Total number of applicants: > 540
- Total number of students admitted: 118
  - 72 Part-time
  - 46 Full-time
- Age range: 22-66
- Undergraduate degrees: BBA, CS, Accounting, Translation, Arts, etc.

Admission Requirements & Schedule

Same as MSc(CS)

Important

In the past, MSc(ECom&IComp) only admitted students with full-time working experience.

In 2021 intake, we will consider outstanding fresh graduates.