Artificial Intelligence: Systems and Technologies
(JS4468 / AISTN)
‘With the omnipresence and power of AI clearly in sight and within our reach, how should humans co-exist and manage this new “being” as a benevolent partner? This is particularly relevant to Hong Kong as it is actively striving for the advancement of Innovation and Technology.’

- Prof. Rocky S. TUAN, Vice-Chancellor and President of CUHK

AI is transforming the way we live!!!

Many disciplines are changing

A – Automotive
B – Bioscience
C – Creative Services
D – Data
E – Education
F – Finance
G – Gaming (note: G may also mean Government)
H – Healthcare
I – Internet of Things

AI in Automobile

Computer vision enables

• Road line detection
• Traffic sign recognition
• Vehicle / pedestrian detection
• ...

Reference: KITTI dataset
http://www.cvlibs.net/datasets/kitti/eval_object.php?obj_benchmark=3d
AI in Bioscience

Prof. P. A. Heng

Prof. Dou Qi

Reference:
https://cutt.ly/xEYdPYC (2019年5月10日明報大學道專題)
AI in Creative Services

AI removes & auto-fills word balloon in manga

References:
https://hk.on.cc/hk/bkn/cnt/aeanews/20200208/bkn-202002081800001681-0208_00912_001.html
http://www.cse.cuhk.edu.hk/~ttwong/papers/mangainpaint/mangainpaint.html
AI in Data

AI can help find insights in data, e.g., social media data, and relate different kinds of data.

Can we predict a series of key phrases for a social media post with both texts and images?

Reference:
https://www.cse.cuhk.edu.hk/lyu/students/phd
AI in Finance

HOW MACHINE LEARNING AND AI ARE TRANSFORMING THE FINANCE INDUSTRY

SEPTEMBER 22, 2021 1:38 PM UTC, FINANCEFEEDS EDITORIAL TEAM

Thanks to the wealth of data that are increasingly available to banks and the general public, sophisticated algorithms are enabling improved processes in many areas of finance.

Image Source: Canva Pro

A subfield of artificial intelligence (AI), machine learning (ML) enables systems to learn and improve independently without the need for explicit programming or human involvement. But ML only works when it has access to enormous volumes of data, allowing

References:
http://startupbeat.hkej.com/?p=91478
AI in Gaming

Some games start to use AI:
• To bring non-player characters (NPC) to life
• To adapt to each player’s gameplay
• To create stronger AI players, e.g., E-sport in Starcraft II (not only chess games)
• To create a more dynamic virtual world

References:
https://www.nature.com/articles/d41586-019-03630-0
https://www.nature.com/articles/d41586-019-03298-6
AI in Healthcare

- Radiology
- Imaging
- Disease Diagnosis
- Telehealth
- Electronic Health Records
- Drug Interactions
- Creation of New Drugs

Reference: https://inews.hket.com/article/2572760/


Prof. Dou Qi
Growing Demand and Opportunities

• Expect more than 50,000 jobs for high-tech industries with the HKSAR government’s policies in innovation and technology

• AI Specialist is the most popular among the top 15 emerging jobs with annual growth of 74% in demand in USA (LinkedIn 2020 Emerging Jobs Report)

• 150M technology-related jobs expected to be added globally over the next five years (LinkedIn Jobs on the Rise in 2021)

References:
Many industries are now looking for the use and advancement of **AI to boost up the work efficiency**

» Opportunities for you to **innovate and change the world**!

Many other possible occupations

» AI Specialist
» Data Scientist
» Software Developer
» Computer Engineer
» R&D for AI
» ...
The AIST Programme
中大計算機科學與工程學系

科技知識培養人才 推動香港人工智能發展

人工智能（AI）發展一日千里，近年政府更大力推動有關AI科技的項目，可見AI業已成為現今科技的大趨勢，社會對相關人才亦相當渴求。因此，香港中文大學（中大）開辦了「工智慧：系統與科技」工學士課程，教授學生基礎知識、創新及可靠的AI解決方案，以及與道德和社會相關的AI問題等，培養能應對各種有關AI挑戰的專才，以應付社會對AI人才的需求。

中大計算機科學與工程學系主任金國慶教授表示，香港是金融科技及智慧城市，近年香港貿易發展局更在生物科技、AI、金融科技、智慧城市及四大領域推行了發展，所以，可見AI對香港而言，是非常重要的科技發展，加上近年AI在不同層面上的應用不斷增加，社會對AI人才的需求殷切，很多相關的工作與政府或大型企業都密切相關，它的前景非常廣闊。

因此，為配合社會需要，中大在兩年前開辦了「工智慧：系統與科技」工學士課程，意圖培育學生掌握人工智能的知識，從而培育更多AI方面的人才。雖然其他大學亦有開辦類似的課程，但金教授指出，中大這個課程非常獨特，有別於其他大學開辦的課程。這課程的全部科目，例如：數學、工程，還有電腦編程等，亦是培養學生擁有 ICT 綜合知識，而「智能多媒體處理」範疇，則讓學生能運用AI在影像、語言處理及其它多媒體上進行智能處理，例如將某個人的面部或聲音口音轉化成另一個人，或是透過AI撰寫文章，甚至對一些文章作出分析等。

學生因應興趣 選讀四大專科範疇

在「智能多媒體處理」範疇，學生可在生物醫學學上學業應用AI技術，例如修讀生物心臟跳動、血管適應等各式各樣的醫學工作；而「智能多媒體處理」範疇，則讓學生能運用AI在影像、語音處理及其它多媒體上進行智能處理，例如將某個人的面部或聲音口音轉化成另一個人，或是透過AI撰寫文章，甚至對一些文章作出分析等。

「大規模人工智能—理論與系統」範疇，主要教授學生AI理論與系統的學習，由於現在AI技術發展日新月異，人們很難掌握AI提供更快及更精確的工作，例如5年前流行應用大數據，當時使用了更強大的CPU/GPU及處理器，形成更先進的AI技術。解決這個問題：最後是「智能客製與機器人學」範疇，將AI系統結合在機器人身上，使用AI可以實現的機器人不只可以動、可以看、聽、說，以及與人交流。多年來，科學家的目標是創造出模仿人類的機器人，顯然要達到這個目標仍需距離，但我們已完成很多東西，例如使用Google進行語音處理，這些都能提高工作效率和減少出錯。

另外，學生不只在工程、理論及系統上學習AI相關的知識，本課程亦會提供一些相關社會科的內容，讓學生了解人工智能發展與社會對社會造成甚麼的影響，將會幫助學生學習思考，利用AI所作出的產品能為人類及社會帶來甚麼好處。金教授舉例，有人製作智能飛機殺人好嗎？製作者能夠製造出壞機器人，做出缺陷的事怎樣？如果有人利用AI多媒體技術將個人的臉轉換成別人的樣子，又會做些什麼？科教授表示AI知識的學生，將成為人的重要角色，將協助他們的三觀思考，令教授AI更人性化，讓學生運用AI在社會中發揮正面作用。

行業前景向好 工作職位眾多

除了以上科目，課程於2021至22年更推出工作學習計劃，讓學生能夠透過為期十個月的實習獲得實踐工作經驗。參與計劃的學生有機會到企業或機構實習，部門眾多包括有學生於匯豐銀行、思科系統公司、百度、阿里巴巴、香港金融管理局等公司及機構獲得實習職位，在專業人士的指導及培養下，使學生獲得廣泛的實踐技能，並在社會環境中，尤其是在多元文化中，獲得大量的實習的工作經驗。在實習過程中，學生可以將課堂知識應用於工作環境，培養出人際關係及技巧，更有助畢業後，成為AI專業技術專家做準備。

金教授表示，現代香港及全球市場對AI專業人士需求旺盛，但AI專業人士很少，根據創新科技局的資料，香港政府在創新科技方面的政策包括「創新創意工場」，為有創意的企業提供空間，以及在觀塘創建香港科技園，預計將為香港及亞洲提供人工智能的技術人才，創造50,000個工作職位。

另外，根據LinkedIn 2021年新興工作報告，人工智能專家在美國15個新興工作中排名前茅，年薪增幅達74%，以退休原因，香港中文大學在培養未來的AI工程師、科學家、生物醫學工程師、信息與計算技術人才、製造和機器人工程師，以及為互聯網公司提供的智能多媒體技術。他續說：「總而言之，就讀課程的學生前景是光明、積極及令人興奮的！」

▲金國慶教授指出，「工智慧：系統與科技」工學士課程獨特之處是集中在工學院內教授學生專科知識及工程師的人才。求，使學生能發展尖端人工智能解決方案。這些方案在學術、工業及社會均具實際意義。課程亦著重基礎數學、理論及實用的系統技術，並提供四個專條範圍，供學生根據自己的興趣選修。
中文大學首創人工智能課程 為未來創科五萬職位提供人才

業界專訪 by Antony Shum on 六月 5, 2019

人工智能無疑是近年非常熱門的新科技潮流，其應用範圍之廣，甚至可以取代真人的工作，影響就業市場。不過也有意見認爲人工智能的普及會為求職市場增加需求，在香港新增達五萬個職位。香港中文大學就看準這個機會，開辦人工智能課程培育相關人才。
Special Features

- **1st Bachelor of Engineering programme in AI in Hong Kong**
  » More preferred by students (based on past JUPAS data)

- **4 specialized streams**
  » Biomedical Intelligence
  » Intelligent Multimedia Processing
  » Large-scale Artificial Intelligence
    – Theory and Systems
  » Intelligent Manufacturing and Robotics
Mission

• **Enable students to develop cutting-edge AI solutions** that are of practical interest to academics, industry, and society

• **Nurture local talents in AI related applications** to meet today’s tremendous need of well-trained talents in AI and related specializations
Programme Objective

• Equip students with the **capabilities of building AI systems** that can analyze and infer knowledge from massive information

• Backed by **rigorous foundations** like data structures, statistics, machine learning and distributed computing

• Emphasize solid trainings on
  » **Mathematical analysis** and reasoning on massive data
  » **Large-scale system design and implementation** for processing massive data
Let’s take a look at our department

https://www.youtube.com/watch?v=yREmhhIWI80
A Long History

• The first computer science department in HK
• Offering **AIST, CDAS, CENG and CSCI** programmes
• A strong alumni network
Excellence in Teaching and Research

2021 Kyoto Prize Laureate and Turing Award Recipient
Prof. Andrew Yao

Seven ACM Fellows
Prof. Andrew Yao, Prof. Martin Wong, Prof., Michael Lyu, Prof. Benjamin W. Wah, Prof. John Lui, Prof. Yufei Tao, etc.

Ten IEEE Fellows
Prof. Irwin King, Prof. John Lui, Prof. Jiaya Jia, etc.

2021 INNS Dennis Gabor Award
Prof. Irwin King

Forbes 30 Under 30 Asia (Healthcare & Science Category) – Class of 2022
Prof. Yu Li

Hong Kong Academy of Engineering Sciences Fellows 2021
Prof. Michael Lyu

InnoStars Award 2021
Prof. Jiaya Jia

Vice-Chancellor’s Exemplary Teaching Award 2021
Prof. Yufei Tao
Recent Achievements in Intl’/local Competitions

Robocon Hong Kong Contest 2022

Championship

3 Awards in International Conference on Computer-Aided Design (ICCAD)

• 1st place for topic “GPU-Accelerated Logic Rewriting” and 2nd place for “Routing with Cell Movement Advanced” in 2021 CAD Contest

• 2nd place in 2021 CADathlon

International Collegiate Programming Contest (ICPC) (formerly named ACM Programming Competition)

2019: ranked 12th (over 3000 universities)

2012: ranked 8th

2011: ranked 13th

2001: ranked 8th
2022 QS World University Ranking

- **#26 Worldwide in Computer Science and Information Systems**
- **#5 in Asia**
- **#1 in Hong Kong**


<table>
<thead>
<tr>
<th>Rank</th>
<th>University</th>
<th>Overall Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>The Chinese University of Hong Kong...</td>
<td>78</td>
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<td></td>
<td>© Hong Kong SAR, Hong Kong SAR</td>
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</tr>
<tr>
<td>=29</td>
<td>The Hong Kong University of Science...</td>
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<tr>
<td></td>
<td>© Hong Kong SAR</td>
<td></td>
</tr>
</tbody>
</table>
CSRanking in 2022

- #33 worldwide in Computer Science
- #9 in Asia
- #1 in Hong Kong

([Link to CSRankings website](http://csrankings.org/#/fromyear/2021/toyear/2022/index?all&world))
For some reason the page of "US News and World Report – Best Universities" for Computer Science is not working, thus I removed it from the slide.

Nicholas Wing Chung Ting (CSD), 13/5/2022
Student Training

CUHK Amazon Deep Learning Workshop 2019 & AWSome Day 2020

Cooperated with Amazon to offer student training in deep neural networks and machine learning

City Challenge – Bridge to a Smarter City 2016

Designed technology-based living applications for the elderly and won the second runner-up
Industrial Visits

• Visit to companies to learn latest development in industry
Work-Study Scheme

• One-year placement and internship for students to gain practical experience in a real working environment

Example of Previous Opportunities in CSE

Google  Microsoft  HP
HSBC  恒生銀行  HANG SENG BANK
Sun Hung Kai Properties  ASM  Pacific Technology
HKSTP  FUJITSU

More details will be announced when places are available!
Strong Alumni Network

**IT Industry**
- Microsoft
- Google
- IBM
- Nokia
- Amazon.com
- Facebook

**Education**
- National University of Singapore
- City University of Hong Kong
- Carnegie Mellon University
- Georgia Tech

**Banking**
- HSBC
- Citibank
- Morgan Stanley
- Deutsche Bank
- Goldman Sachs
I'm now working in **Deloitte’s Cyber Risk Advisory Team**. Cybersecurity is a promising job, you can equip yourself to be a cybersecurity expert by enrolling relevant courses provided by the Department of Computer Science and Engineering. Cybersecurity professionals, like information security analysts, protect businesses, governments, and individuals from criminal activities on the internet. With the explosive growth of the internet in business, education, and personal communication, computer experts with knowledge of cybersecurity are in high demand.
The courses offered by the CSE department give a solid foundation on both the practical and theoretical sides of CSCI programme. I’m now working in Google's Android Pixel team, topics from CSCI courses still often pop up during my day-to-day job. As the software industry becomes increasingly competitive, I feel quite lucky that I’ve undergone such rigorous academic training.
 Sharing from Our CSE Students

Hei Yiu LAW,
CENG Graduate of 2021

During the 4 years of my study as a CENG student, I could take courses on different topics. These courses not only consolidate my knowledge related to my major but can also train up my critical thinking and logical thinking skills. We have to design & implement a smart hardware product in just a few weeks and this project not only gives me a hands-on experience on designing smart hardware product, but also improves my communication skill and time management skill.
The special thing about AIST programme is the learning experience which has been eye-opening. I can get to build a solid foundation on not only the problem-solving mindset, but also fundamental knowledge such as calculus and statistics. Although some may find them difficult, they are valuable tools that will help distinguish me from the non-engineering counterparts.
What’s More?

• Chances to **create your own project and innovation** with support and advice from CSE teachers

• **Exchange opportunities** to world-class universities

• **High competitiveness** in job market with **90%** of CSE graduates employed within one month of graduation

• CSE teachers usually have the **highest teaching evaluation scores**
Why CSE Department?

Because it is fun!
Admission Requirements for JUPAS Applicants
# AIST Admission Requirements (2023 Entry)

<table>
<thead>
<tr>
<th>HKDSE Subject</th>
<th>Minimum Level</th>
<th>Subject Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HKDSE Core Subjects</strong></td>
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<td></td>
</tr>
<tr>
<td>English Language</td>
<td>4</td>
<td>1.25</td>
</tr>
<tr>
<td>Chinese Language</td>
<td>3</td>
<td>1.25</td>
</tr>
<tr>
<td>Mathematics (Compulsory Part)</td>
<td>5^</td>
<td>1.75</td>
</tr>
<tr>
<td>Liberal Studies</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td><strong>HKDSE Elective Subjects</strong></td>
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<td></td>
</tr>
<tr>
<td>Any two subjects</td>
<td>3</td>
<td>#</td>
</tr>
</tbody>
</table>

^ Applicants with level 4 in Mathematics (Compulsory Part) and good results in other HKDSE subjects will be exceptionally considered on a case-by-case basis.

# The AIST programme accepts any subject as elective, with subject weighting of **1.75** for Mathematics M1/M2; **1.5** for Biology, Chemistry, Physics, Combined Science and ICT; and **1** for any other subjects.

Selection is based on the Best 5 HKDSE subjects with subject weighting applied. Bonus points will be awarded to the 6th and 7th subjects, if any.
AIST Admission Grades (2021 Entry)

<table>
<thead>
<tr>
<th>Percentile</th>
<th>CHI</th>
<th>ENG</th>
<th>MATHS</th>
<th>LS</th>
<th>M1/M2</th>
<th>1st Elective</th>
<th>2nd Elective</th>
<th>3rd Elective</th>
<th>Total Reference Score</th>
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</thead>
<tbody>
<tr>
<td>Upper Quartile</td>
<td>4</td>
<td>5**</td>
<td>5**</td>
<td>4</td>
<td>5*</td>
<td>5*</td>
<td>5*</td>
<td>5*</td>
<td>32</td>
</tr>
<tr>
<td>Median</td>
<td>3</td>
<td>5</td>
<td>5**</td>
<td>3</td>
<td>5**</td>
<td>5*</td>
<td>5</td>
<td>5</td>
<td>30</td>
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<tr>
<td>Lower Quartile</td>
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<td>5</td>
<td>5**</td>
<td>4</td>
<td>5</td>
<td>5*</td>
<td>5*</td>
<td>5</td>
<td>29</td>
</tr>
</tbody>
</table>

^ The Total Reference Score is the total score of the applicant calculated based on the best 5 subjects in Category A or Category C of HKDSE:
where lv 5** = 7, lv 5* = 6, lv 5 = 5, lv 4 = 4, lv 3 = 3, lv 2 = 2, lv 1 = 1 for Category A subjects;
and Grade A = 5, Grade B = 4, Grade C = 3, Grade D = 2, Grade E = 1 for Category C subjects.

Admission is not based on public examination results alone, and the overall scores of students admitted vary from year to year. The information provided is for reference only and should not be used to predict the chance of admission in subsequent years.

Admission Requirements for Non-JUPAS Applicants
AIST Admission Requirements
(for Non-JUPAS & International Applicants)

• Applicants seeking admission on the strength of qualifications other than HKDSE examination results (e.g., IB, GCE-AL, overseas qualifications) can apply through Non-JUPAS channels

• Will be considered on the basis of their education background and academic achievements

• Will be expected to demonstrate outstanding abilities in English, mathematics and science subjects

Check more details at OAFA’s website!

Non-JUPAS Applications: http://admission.cuhk.edu.hk/non-jupas-yr-1/requirements.html
International Applications: http://admission.cuhk.edu.hk/international/requirements.html
Curriculum Structure
Curriculum – Overview

1. Faculty Package
2. Major Foundation
3. Major Core
4. Final Year Project

Major Electives

Major Core

University Common Core (Languages, GE, PE) (39 Units)

Free Electives (9 Units)

123 units

Major Practicum
Curriculum – Major Requirements

- 4: Final Year Project, Major Electives
- 3: Major Core, Major Electives
- 2: Major Foundation, Major Core
- 1: Faculty Package, Major Practicum, Major Core

Total Units: 75 units
Curriculum – Faculty Package and Foundation

Faculty Package and Foundation (15 units)

- Problem Solving By Programming (ENGG1110)
- Linear Algebra for Engineers (ENGG1120)
- Multivariable Calculus for Engineers (ENGG1130)
- Calculus for Engineers (MATH1510)
- General Physics for Engineers (PHYS1003)
Curriculum – Major Practicum

Major Practicum (3 units)

- Technology, Society and Engineering Practice (AIST2601)
- Engineering Practicum (AIST2602)
Curriculum – Major Foundation

**Major Foundation** (10 units)

- Introduction to Computing Using Python (AIST1110)
- Discrete Mathematics for Engineers (ENGG2440)
- Probability for Engineers (ENGG2760)
- Statistics for Engineers (ENGG2780)
Curriculum – Major Core

Major Core (19 units)

» Introduction to Artificial Intelligence and Machine Learning (AIST1000)
» Introduction to Computer Systems (AIST3020)
» Numerical Optimization (AIST3030)
Curriculum – Major Core

Major Core (19 units)

- Data Structures (CSCI2100)
- Design and Analysis of Algorithms (CSCI3160)
- Fundamentals of Artificial Intelligence (CSCI3230)
- Fundamentals of Machine Learning (CSCI3320)
Curriculum – Major Electives

Major Electives (22 units)

Streams
1. Biomedical Intelligence
2. Intelligent Multimedia Processing
3. Large-scale Artificial Intelligence – Theory and Systems
4. Intelligent Manufacturing and Robotics

Non-Stream
5. General Artificial Intelligence: Systems and Technologies
Stream 1: Biomedical Intelligence

• Study how to build **intelligent biomedicine** and healthcare applications

• Two emerging markets:
  » **Personalized genomics** and **precision medicine** (e.g., disease prevention, prediction, early diagnosis and treatment)
  » **Clinical record systems** (e.g., electronic medical records and pharmacy prescription information and insurance records)

Research on medical image analysis by Prof. P.-A. Heng
Stream 2: Intelligent Multimedia Processing

- Study how to bridge AI and human brain functions and design models, algorithms, and systems for multimedia processing with high performance and high accuracy.

- Areas: digital image processing, face recognition, computer animation, human-computer interactions, speech and audio processing, computational linguistics
Stream 3: Large-scale AI – Theory and Systems

• Study the **advanced techniques** of realizing large-scale artificial intelligence from both theory and system perspectives
  » **Theory**: machine learning theory, statistical inference, online algorithms, *etc.*
  » **Systems**: high performance computing, distributed storage, **big data management**, *etc.*
Stream 4: Intelligent Manufacturing & Robotics

• Study how to integrate manufacturing and robotics with AI for different aspects of human activities.

• Focus on the topics of mechanics, sensing and control, design & manufacturing, human-robot interactions, etc.
Many other practical and interesting courses in AI:

- Machine Learning
- Deep Learning
- Large Scale Distributed Computing
- Intelligent Embedded Systems
- Knowledge Representation/Inference
- Human-Computer Interactions
- Natural Language Processing
- Big Data Analytics

... ...
Final Year Project (FYP) (6 units)

- Pick an interesting topic
- Interdisciplinary nature
- Apply the knowledge learnt in the previous courses
- Many open topics. Your creativity and discussion with the supervisor
- Complete a project under the supervision of an advisor

Open topic FYP – you may also propose a project to a professor
FYP (AI + Bioinformatics)

• Apply machine learning to predict RNA-protein interaction

RNA folds to a specific structure to fit into the protein binding site

Sample from current CE/CS students (FYP KY1804)
FYP (AI + Multimedia)

• Design a neural network that learns to produce a tiling

Sample from current CE/CS students (FYP CWF1902)
FYP (AI + Computer Vision)

• Chinese Medicinal Herb Recognizer

Sample from current CE/CS students (FYP MHW1804)
FYP (AI + 3D Vision)

- Design the best neural network for 3D car detection

Sample from FYP CWF2002 (The UG student co-authored “research papers” in AAAI 2021 & CVPR 2021)
FAQ Contents:
Q: Will there be any interview?
Q: Will there be any exchange opportunity?
Q: Will there be any scholarship or financial aid?
Q: What is ELITE Stream? How can I join it?
Q: What are the differences between AIST and CSCI?
Q: What are the career prospects of CSE graduates?
Q: Can I transfer to CSCI / CENG / or other majors in Year 2?
Q: Can I declare AIST / CSCI / CENG as second major or minor?
Q: I am still struggling to choose AIST / CSCI / CENG. What can I do?
Q: Will AI replace us in the near future?
Q: Will there be any interview?
Interview Arrangement for JUPAS Students

• Interviews will be conducted in mid-/late June every year.

• We only consider **Band A applications** for shortlisting.

• Shortlisted applicants will receive an invitation email for the details, *e.g.*, **date**, **time**, **format**, **etc.**

• Stay tuned! **Check your email** regularly for the latest update!
Interview Arrangement for Non-JUPAS & International Student

• Interviews will be conducted in batches from January every year.

• You are encouraged to attach adequate supporting documents, e.g., transcripts, predicted grade, certificates, etc., in your application for our holistic review.

• Shortlisted applicants will receive an invitation email for the details, e.g., date, time, format, etc.

• Stay tuned! Check your email regularly for the latest update!
Q: Will there be any exchange opportunity?
Exchange to Overseas Universities

• You are encouraged to join the exchange programme to broaden your horizon and learn with peers from diverse background

• List of some overseas universities for the exchange
  » Macquarie University, Australia
  » University of Toronto, Canada
  » Shanghai Jiao Tong University, China
  » Telecom & Management SudParis, France
  » Royal Institute of Technology (KTH), Sweden
  » University of California, Davis, USA

... More information: https://www.oal.cuhk.edu.hk/exchange2021/
Q: Will there be any scholarship or financial aid?
Scholarships and Financial Aids

• The Government and the University offer various *scholarships* and *financial aids* depending on student’s financial situation, or their outstanding performance in academic or other areas

• List of some scholarships and financial aids
  » Admission Scholarships
  » Scholarships for Overseas Studies
  » Government or University Financial Aid
  » Summer Subsistence and Travel Loan Scheme
  » Student Residence Bursary Scheme
  ...

Check out more details at the [Office of Admissions and Financial Aid (OAFA)](https://www.example.com)!
Q: What is ELITE Stream? How can I join it?
Engineering Leadership, Innovation, Technology and Entrepreneurship Stream (ELITE Stream)

• Offered by the Faculty of Engineering to students with excellent academic performance.

• Challenge yourself with additional coursework, invaluable extra-curricular activities, exclusive stimulating and inspiring courses, special exchange opportunities, etc.!

Check out more details at the Faculty of Engineering!
Q: What are the differences between AIST and CSCI?
AIST vs CSCI?

- AIST and CSCI have related foundation & basic theories

- **AIST requires stronger Math foundation** since it involves statistics, probability, calculus, linear algebra, etc., which are basis for **machine learning and deep learning**

- CSCI focuses more on **software design and computing solutions**, taking care of coding and software architecture
Q: What are the career prospects of CSE graduates?
Career Prospects

• Employers of our graduates include:
  » Google
  » Intel
  » Microsoft
  » IBM
  » Apple
  » Facebook
  » Yahoo
  » Deloitte
  » Hong Kong Government
  » Investment Banking Institutes

Many disciplines are changing
  A – Automotive
  B – Bioscience
  C – Creative Services
  D – Data
  E – Education
  F – Finance
  G – Gaming (note: G may also mean Government)
  H – Healthcare
  I – Internet of Things
Q: Can I transfer to CSCI / CENG / or other majors in Year 2?
If you look for CSCI / CENG / or other majors instead...

- You may submit application for change of major (to CSCI / CENG /or other majors), subject to prevailing regulations stipulated by RES and approval by relevant unit(s).

- If you are determined to go for CSCI / CENG, you may choose Computer Science and Engineering (JS4412) as your choice and select CSCI / CENG in Major Allocation when promoting to Year 2.
Q: Can I declare AIST / CSCI / CENG as second major or minor?
Declare Second Major / Minor

• You are **not allowed to declare AIST / CSCI / CENG as your second major or minor** if you are a CSE student.

• However, you are encouraged to broaden your horizons and declare second major / minor offered by other departments.
Q: I am still struggling to choose AIST / CSCI / CENG. What can I do?
If you are still struggling to choose...

• You can go through our website and admission materials for a better understanding before submission, and write to us via email to ug-admiss@cse.cuhk.edu.hk whenever you have any queries.

• You can join our outreach activities in the future and chat with our teachers and student ambassadors.

• You can also subscribe our social media channels to receive the latest updates from us! Stay tuned!
Q: Will AI replace us in the near future?
Humans in Future AI Era

• Umm... there may not be a perfect answer at the moment
• From what can be observed recently: **routine** jobs are more easily replaced by AI, while **others** are more likely to go into a “**human-in-the-loop**” model, where AI and humans work together to boost performance, *e.g.*, creative media

Contact Us

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See you in Fall 2023!