




# BSc in Data Science and Technology (DSCT)



The Data Science and Technology (DSCT) program is jointly offered by the School of Science and the School of Engineering. Various business and industry sectors have a huge demand for data specialists / scientists to conduct an in-depth analysis of the valuable datasets collected during the business process. The program will equip students with various mathematical tools, data analytical skills and IT technologies to make sense of data obtained from various sources.

DSCT students use a wide spectrum of mathematical and IT tools to develop basic knowledge of data analysis and programming skills that will allow them to understand and analyze actual phenomena of massive data obtained from rich information sources. Additionally, students will receive hands-on experience and expert guidance to acquire practical skills in data analysis that will provide them with an excellent step in their future. Areas of expertise in this program include machine learning, classification, clustering, data mining, database management, cloud computing, data visualization, etc.

## Program Curriculum

The DSCT program combines basic knowledge of data analytics, programming skills, mathematical and computational background, which provides students an excellent foundation a solid foundation for their future career.

The DSCT program is a tech-based program. We provide students with a solid foundation in the fundamental and in-depth knowledge in special areas.

- It emphasizes on students' mathematical and computational disciplines.
- Students will receive hands-on experience and expert guidance to acquire practical skills of data analysis that will provide them a good step to their future.

## Intended Learning Outcomes

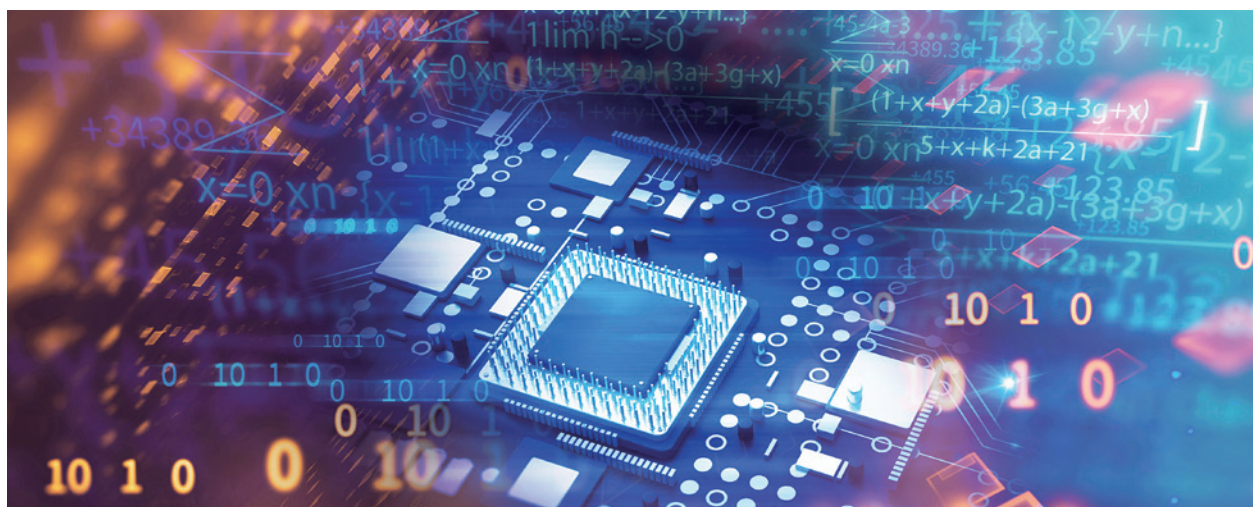
- The ability to understand data problems arising in the areas of commerce and industry etc.
- The ability to model data problems using different mathematical tools.
- The ability to design and implement efficient algorithms to solve different mathematical models for data problems.
- The ability to interpret the results provided by different algorithms and apply them to the data problems to gain meaningful insights or offer predictions.

## Applications of Data Science and Technology

- Gaming
- Recommendation System
- Commercial Data Analytics
- Social Media Analytics
- Digital Marketing
- Self-Driving System
- Speech Recognition
- Smart Cities and Urban Analytics
- Fintech
- Personalized Medicine

## Extended Major Option

The DSCT students can opt for an Extended Major in Artificial Intelligence (AI). Extended Major is not a standalone major, but is adhered to a certain majors as expanded choices. It enables students to keep abreast of emerging technology and innovation that are shaping our society in a multi-faceted way. The curriculum of this program is cross-disciplinary and practical. DSCT students with this extended major can learn many innovative applications of artificial intelligence in the related areas to Data Science and Technology. Upon fulfilment of the curriculum requirement, the students will be awarded the BSc degree in Data Science and Technology with an Extended Major in Artificial Intelligence.



## Enrichment Activities

Students in the DSCT program can enjoy all the student services and facilities provided by both Schools:

- Exchange programs offered by the School of Science and the School of Engineering
- Internship opportunities referred by the Department of Mathematics and the Department of Computer Science and Engineering



A DSCT student enjoyed a hack day at Google during the exchange at the Technical University of Denmark.



A DSCT student interned at Hong Kong Applied Science and Technology Research Institute (ASTRI) as a software engineer.

## Career Prospects

A lot of data specialist/scientist positions are created every day in various business and industry sectors to make use of the massive datasets collected there. Graduates of data science and technology is of high demand in today's job market, and most of them will be employed in those sectors such as IT, engineering, and finance. There will be other career opportunities such as management and sales etc. Below are some examples:

- Data Scientists
- Data Engineers
- Data Analysts
- Deep Learning Research Scientist
- Data Management Specialist
- Strategic Cloud Engineer





## Words from DSCT Graduate

Studying Data Science at HKUST has been an exhilarating journey. The cutting-edge curriculum and hands-on projects have equipped me with valuable analytical and programming skills. From data visualization to machine learning, I've delved into various domains of this ever-evolving field. Faculty guidance has further enhanced my understanding of this subject. The opportunities for internships have been invaluable in preparing me for a rewarding career. I am excited to apply my knowledge to solve real-world challenges in the data-driven era.

### Mendes WONG

BSc in Data Science and Technology, with an additional major in Mathematics,  
Class of 2023

## Admissions Requirements

Prospective students may apply for the *Science (Group A) program (JS5102)* from the School of Science, or the *Engineering program (JS5200)* from the School of Engineering through direct choices in the JUPAS / Non-JUPAS admissions scheme. Students who want to opt for an Extended Major may also apply for the *Science (Group A) with an Extended Major in Artificial Intelligence program (JS5181)* or the *Engineering with an Extended Major in Artificial Intelligence program (JS5282)*.

Upon completion of the first year of study, students can declare major in Data Science and Technology.

The pre-requisite courses include:

- MATH 1012 Calculus IA / MATH 1013 Calculus IB / MATH 1023 Honors Calculus I, and
- MATH 1014 Calculus II / MATH 1024 Honors Calculus II, and
- COMP 1021 Introduction to Computer Science / COMP 1022P Introduction to Computing with Java

## JOIN DSCT PROGRAM GO BEYOND YOUR LIMITS FIND TRANSFORMATION HERE

### School of Science – Undergraduate Admissions

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DSCT website



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