

Inaugural Data Science and Analytics Day

How does Grab assign a driver in the shortest possible time? Are driverless cars safe?

To address these questions and how mathematics and statistics come into play in the realm of data science, the Department of Mathematics held its inaugural Data Science and Analytics themed-event on 15 March.

Head of Department Prof ZHU Chengbo welcomed participants and shared on the new Data Science and Analytics programme. The four-year direct Honours programme is designed with sufficient technical depth to equip graduates with the ability to develop novel analytical tools for new scientific applications and industry problems that will emerge in future. The programme is offered by the Departments of Mathematics and Statistics and Applied Probability in the Faculty, in conjunction with the School of Computing.

Sharing their expertise at this event were Mr TAY Yu Xuan, Data Scientist, GovTech and a Statistics alumnus; Dr YANG Liuqin, Data Scientist, Grab and a Mathematics alumnus; and Prof JI Hui from the Department of Mathematics.

Mr Tay provided a peek into his work in the data science field, how it contributes to GovTech's roles in transforming the delivery of Government digital services and developing Smart Nation capabilities, as well as career prospects in the data science industry. Dr Yang delved into mathematical problems faced by Grab, such as how to balance match quality and match rate, and how their data science team solves them, using two main mathematical models – the optimisation model and the prediction model.

Prof Ji ended the event with his intriguing presentation on driverless cars, and how mathematics was a driving force behind the advances in visual navigation technologies which are critical for safe driving. He also shared several mathematical concepts and computational algorithms that contribute to building state-of-the-art visual navigation systems.

Through this event, the Department of Mathematics seeks to reach out to the general public and pre-university students, especially those who are interested to pursue data science and mathematics related subjects when they enter university, to share on the fast-growing field of data science and its applications in daily living.

Stephanie SEOW Xi Hui, a Meridian Junior College (MJC) student, said, "I learnt what data science was about and how relevant it is, making it a very promising career choice. It is also a mix of subjects I am interested in – programming, business and statistics. The event piqued my interest in the data science programme."

Serene LEE Si Ni, MJC student, said, "I learnt how data science is a key factor behind GrabTaxi's operations – for instance, how it is used to navigate drivers to the best suited passengers according to distance. I've always heard about driverless cars but with this programme, I truly understand the system of driverless cars, such as the sensors and how data science plays such a significant role. The programme was really insightful as we discovered how mathematics is applicable in our daily lives, like how the matrix is being used in driverless cars. Mathematics plays a huge role in making GrabTaxi and driverless cars possible."

Teachers from MJC also provided positive feedback. "It is an enriching experience as the programme provided insights into the exciting field of Data Science and Analytics and demonstrated the real-life applications of Mathematics. In particular, it was fascinating to learn about the applications of Mathematics in optimising GrabShare matches and how operations in matrices were used in data processing for driverless cars. This enabled us to appreciate how data science analytics is relevant event as technologies continue to evolve rapidly."

Another teacher from MJC said, "Mr Tay shared useful information, such as some of the skills required to be a data scientist and the computer language predominantly used. This will inspire those with knowledge in computer languages. Also, we got to learn something new, such as machine learning."

The inaugural event was attended by more than 150 participants. The Department plans to organise such events on a regular basis in the future.



Mr Tay Yu Xuan shared with the audience about Data Science, his work as a data scientist as well as career prospects in this field



Dr Yang Liuqin brought the participants through what goes on "behind the scenes" at Grab



Prof Ji Hui offered the participants a glimpse into the technology behind driverless cars

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