

**CUHK Convocation Outstanding Services  
and Creativity Student Awards 2018/19**  
香港中文大學校友評議會傑出服務及創意學生獎 2018/19

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<b>Major</b>	Mechanical and Automation Engineering

I am honoured to be awarded the CUHK Convocation Outstanding Services and Creativity Student Award 2018/19. I would like to express my sincerest gratitude to the CUHK Convocation. The award provides me with great confidence and support to continue my work in the field. As a kid, I liked playing with toys and video games. In some ways, I was fascinated by how they work and how they are built. My passion for them extended towards building stuff and science in general. I appreciate the human ingenuity in figuring how something works and use it in clever ways. That is why I chose the path of a Mechanical and Automation Engineer.

**Automated Vehicle for Disaster Relief**

My maiden Engineering competition was in last year, the Greater China Design Competition. In this competition, participants were required to build a scale-down prototype vehicle for disaster relief. The vehicle had to carry rice through various obstacles, such as a pool of green beans, wooden rods and tall steps. Our vehicle made use of tank tread to overcome the uneven terrain and gear racks to produce lift for climbing the stairs. A motor-pulley system is implemented to open the trap door to release the payload at target location. Our vehicle could carry the most rice with moderate speed. Unfortunately, the competition was lost due to the vehicle tipping over. It fell over due to poor control and the lack of consistency of the design. I took a valuable lesson on the importance of a robust design over all else.

**Robocon 2018**

I then joined the CUHK Robocon team in the Robocon 2018. Participants are required to design two robots in the competition, one for carrying and passing balls, another for receiving and throwing the balls to certain targets. Learning from my mistake before, I decided to fully automate the robot to eliminate any possible room for mistakes. Making use of line sensors, Infrared sensors and a camera for scanning QR code, we were able to accurately control the robot's position and achieve multiple, consistent and smooth passing. Our effort in the competition won us the second-runner-up in the 16 university teams. I am currently still working on the team for motor and motion control programming.

**Solar Plane Team**

During the summer holiday, I was part of the CUHK solar plane team. I was trusted with the mechanical design part of the project. The design for the solar plane have much more constraint. The plane ought to have enough solar cells to power itself and house different sensors and equipment while have light weight and an aerodynamic shape. I designed the first prototype with balsa wood, carbon fibers and 3D printing to achieve the above requirement. It was then tested numerous times to find out bugs and to be improved upon.

Once again, I would like to thank the CUHK Convocation for the award. In the future, I believe I can make use of my passion and knowledge in designing more machines for improving people's life.



This is me and my award-winning robot in Robocon 2018.



(Top left)

This is the Robocon team in Robocon 2018