

Engineering innovation

Defence Science and Technology Agency (DSTA) scholars Huang Huimin and Celestine Lau do cutting-edge research

by Joyce Lin

THEIR respective jobs at DSO National Laboratories and the Defence Science and Technology Agency (DSTA) see Ms Huang Huimin (right), 25, and Mr Celestine Lau (below), 27, help to keep Singapore safe.

Ms Huang is currently a member of the technical staff team at DSO National Laboratories, doing research on electronic warfare. The Hwa Chong Institution alumna holds bachelor's and master's degrees in electrical engineering from Purdue University and Stanford University respectively.

Mr Lau is an engineer with the infocomm infrastructure team at DSTA. As a defence engineer, he provides se-

curity assessments and consultancy to a variety of different projects managed by various departments in DSTA. He graduated with bachelor's and master's degrees in electrical and computer engineering from Carnegie Mellon University.

When Ms Huang's classmates started discussing studying overseas and scholarships during her second year of junior college, it led her to contemplate what she wanted to do for the rest of her life.

She says: "I had an affinity for the sciences as I have always been interested in how things around me work."

Similarly, Mr Lau had been fascinated by computer science since his secondary school days, and he knew he wanted to become an engineer by the time he graduated from Raffles Junior College.

Both Ms Huang and Mr Lau found out about the DSTA scholarship from scholarship guides, scholarship fairs and by reading up on the DSTA website.

"The DSTA scholarship offers a range of specialisations across diverse fields in defence science and technology," says Mr Lau.

"You also get to choose from a wide selection of courses and programmes at world-class engineering institutions. I chose the DSTA Scholarship as I was drawn by the prospect of contributing solutions that strengthen our nation's defence capabilities."

Ms Huang was attracted to the fact that it was one of the few scholarships that covered students up to the master's level.

She says: "The DSTA Scholarship was a forward-looking one with a strong drive towards staff development. This was important to me and a big consideration when choosing a scholarship."

Cutting-edge research

Their scholarship allowed both scholars to pursue their studies overseas and get exposure to cutting-edge research in their respective fields.

"The DSTA Scholarship provided the opportunity for me to gain a first-rate education, and opened my eyes what engineering innovation can achieve," says Mr Lau. "At Carnegie Mellon University, I took part in several projects to develop applications that strive to enhance our daily lives and benefit society."

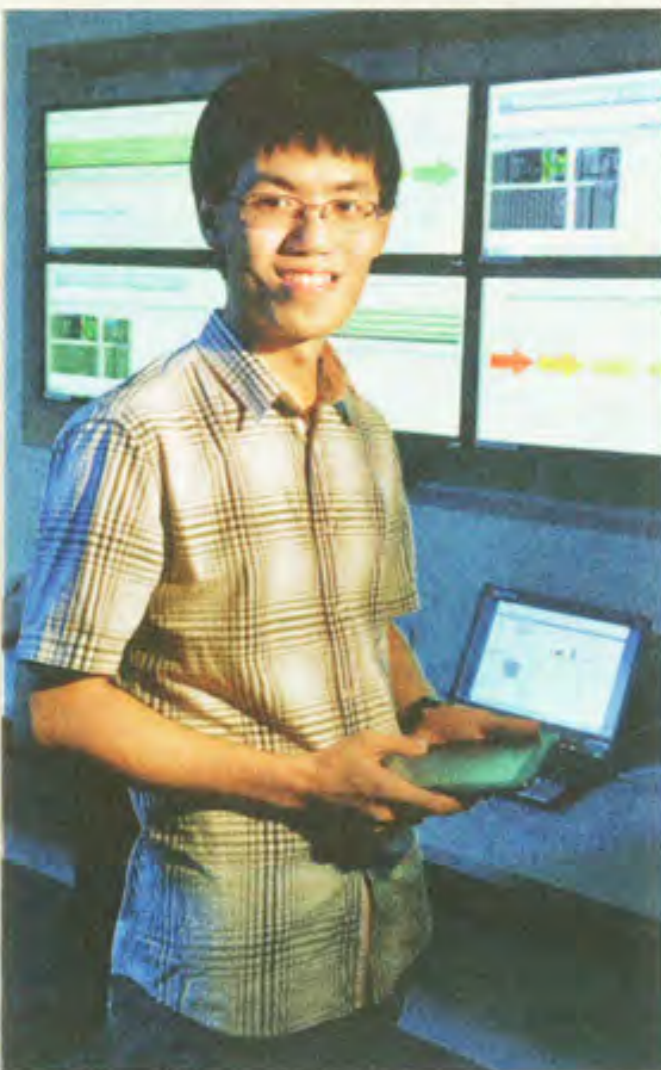
One of his most memorable projects involved creating a micro wearable computer to monitor one's heartbeat, respiratory rate and other vital body signs conveniently.

He says: "After the excitement of developing a work-



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— Ms Huang Huimin, member of technical staff, DSO National Laboratories



PHOTOS: CHONG JUN LIANG

ing prototype, I tested it out by strapping it on and running around campus. I was delighted to find that my innovation worked."

The scholarship also provided a sense of job security. Ms Huang says: "A significant number of my peers were affected by limited career opportunities in the United States during the global recession of 2009."

Instead of worrying about finding a job, Ms Huang enjoyed being able to focus on learning. She also approached her professor to do research with PhD students during her holidays.

As a scholar, Ms Huang could choose to intern with various organisations within the defence technology community. These include DSTA, DSO National Laboratories (DSO), Centre for Strategic Infocomm Technologies (CSIT), Air Logistics Organisation (ALO), Naval Logistics Organisation (NLO) and Headquarters, Maintenance and Engineering Support (Army) (HQ MES).

Ms Huang chose to intern at DSO and was motivat-

ed by the high level of pride that DSO staff displayed in their work.

The period of internship for Mr Lau prepared him for his career as a defence engineer.

"Throughout the internship, my mentor and other colleagues were very supportive," says Mr Lau. "Despite their busy schedules, they readily rendered their help whenever I encountered a problem. It helped me to settle in easily and reaffirmed my decision to join the DSTA family."

Mr Lau adds: "It gives me great satisfaction to know that our collective efforts help Singapore to stay one step ahead of hackers and protect critical defence systems against cyber threats and attacks."

Ms Huang says: "When you apply for a scholarship, you are really applying for a career. If you know that you want a career where you can make meaningful contributions to national security, then the DSTA Scholarship is definitely your best choice."