

DEFENCE SCIENCE AND TECHNOLOGY AGENCY

AT THE FOREFRONT OF DEFENCE TECHNOLOGY

In today's battlefield, technology is the key to victory and the Defence Science and Technology Agency is the organisation that holds the key, working very closely with the Singapore Armed Forces to provide technological solutions that will give our soldiers that critical edge. Two DSTA engineers tell us about their diverse work experiences at the forefront of cutting-edge defence technology. *by farhan shah*

Much of the peace and security that we enjoy today is due to the presence of a strong armed force. One of the vital components in this picture is the Defence Science and Technology Agency (DSTA).

Set up under the purview of the Ministry of Defence (MINDEF), DSTA is responsible for equipping our soldiers with leading-edge technological solutions that maintain the Singapore Armed Forces' (SAF) status as a formidable fighting force.

The organisation houses some of the brightest minds working on a diverse range of complex and large-scale systems engineering programmes that shape the defence and security landscape of the country.

A meaningful career in defence technology

It was this opportunity for a meaningful career in defence technology that compelled 28-year-old Yvonne Hou and 31-year-old Jonathan Boo to carve out a career with DSTA.

For Yvonne, her first encounter with DSTA was while she was still a student.

"During my undergraduate days, I chose to do an internship with DSTA because the organisation's mission resonated with me – that of harnessing science and technology for the defence and security of Singapore," she says.

Yvonne had her first glimpse of defence technology as an intern in the C4I Development Programme Centre, which develops Command and Control, Communications, Computer and Intelligence (C4I) solutions to enable the SAF to achieve a high state of situational awareness and operational effectiveness.

Her internship experience was so fulfilling that Yvonne chose to return to DSTA upon her graduation.

"During my internship, I got a glimpse of the positive and conducive working environment in DSTA. I also had supportive colleagues who were willing to share information and guide me. There is also a good sense of work-life balance in here," the Senior Engineer says.

Diversity in work

As the technology arm of the Ministry of Defence, DSTA engineering and info-

comm technology professionals have a wide spectrum of expertise.

This ranges from large scale systems integration, protective infrastructure and infocomm systems development to life-cycle systems management and defence procurement. DSTA is organised into 11 different programme centres, each focusing on a specific area of expertise.

Yvonne is under the Naval Systems Programme Centre, a division that focuses on advanced surface and underwater naval systems for the Republic of Singapore Navy.

When she first began her career, Yvonne was responsible for managing the acquisition, integration and testing of underwater systems for the Navy's frigates.

"My team and I conduct comprehensive market surveys to evaluate the most technologically competitive and cost-effective technologies to meet the Navy's requirements. Based on our evaluations, we then acquire and integrate these naval and weapon systems. If these capabilities are not available off-the-shelf, we work closely with the Navy and our technology partners to develop these capabilities locally," Yvonne explains.

Yvonne sharpened both her technical and her management expertise through her experience managing different Navy personnel and their operational requirements.

"I honed my soft skills, as we had to develop good working relationships with the Navy operators in order to fully understand their requirements and to propose effective solutions. There is a lot of team work in ensuring that the project runs smoothly. This project management experience gave me a good overview of the entire life cycle of the systems engineering process," she adds.

The skills Yvonne acquired in her first year as a young engineer helped her immensely when she was rotated to the Tuas Maintenance Base.

Her two-year stint at the base was a very different experience, working first-hand with the Navy to ensure the naval systems on board the different vessels were operationally ready and reliable.

She also found innovative ways to improve the life span of systems in order to counter the challenges of systems becoming obsolete.

With exposure to such a broad scope of work, it is no wonder that Yvonne says "no two days in DSTA are the same."

A close-knit community

A spirit of teamwork and camaraderie is also strongly encouraged within the organisation, as Senior Engineer Jonathan attests to.

"DSTA adopts an 'open concept' working environment and it really brings with it the kampong spirit. I love the level of interactivity and bonds built with my colleagues," he shares.

To foster closer bonds among the 3000-strong DSTA community, staff are encouraged to join the various 'Special Interest Groups' that take part in activities such as dragon boating, Toastmasters and a whole host of sports. Jonathan himself is the resident drummer of DSTA's house band and has performed for a number of company events.

"It's opportunities like these that not only take your mind off work, but provide valuable chances for you to network and get to know the many interesting people in the community in a fun way," Jonathan says with a smile.

Evolving technology landscape

DSTA also actively develops its staff, with many learning and training opportunities. The DSTA Postgraduate Scholarship is one such opportunity for staff and is an investment in the people to develop them in specialised competencies and technology areas.

Jonathan was one of the recipients of this scholarship, which allowed him to pursue a Master's degree in Software Engineering at Carnegie Mellon University.

"The programme was an eye-opener and it was interesting not only to make friends from different cultures but more importantly, understand and appreciate how this diversity affects the philosophy and approach taken towards software engineering," Jonathan reveals.

His newly acquired knowledge is coming in useful in his current project to enhance the Army's field training with mobility computing.

As a member of DSTA's Enterprise IT Programme Centre, Jonathan and his colleagues look for opportunities for the strategic and innovative use of IT. One of the department's initiatives is the issuing of tablet computers to facilitate training for new recruits.

"The tablets aim to provide soldiers easy access to e-learning resources, allowing soldiers to carry out self-learning of lessons. The use of these iPads complements MINDEF's existing suite of mobile IT solutions that support training instructors and logisticians," Jonathan says.

Jonathan's team is specifically looking at methods to tap on the evolving capabilities



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of today's mobile devices and to augment field training assessments with interactive learning.

As part of his diverse portfolio of projects, Jonathan has also been part of the team behind the Multi-Mission Range Complex (MMRC), slated to be completed in 2013.

The MMRC is the Army's first three-storey indoor complex housing seven shooting ranges and will be equipped with state-of-the-art technology to provide realistic scenario-based training.

"These projects involve cross-domain competencies from the whole of DSTA, so our team of engineers in Enterprise IT has been working closely with engineers who specialise in areas such as building infrastructure and simulators," Jonathan says.

A higher calling

To be able to contribute and be an integral part of Singapore's defence technology landscape are the reasons that motivate Jonathan and Yvonne in their jobs.

"It is gratifying to see the systems we acquire, develop and integrate for the SAF in operation," Yvonne says.

Jonathan agrees fully, adding on, "In Singapore, there are very few organisations that can match DSTA and offer you exposure to projects of substantial value and impact to society - in this case the defence of Singapore. The challenges are significant and often, with little or no precedence. It requires you to think on your feet and you will grow tremendously in the process. If you're passionate about cutting-edge technology, consider a career with DSTA."



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