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RECRUIT
Careers in Engineering
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Multidisciplinary arena

Mr Lee plans acquisitions, does studies on new EO technologies, and conducts prototype tests to build developmental products into robust systems. PHOTO: DSTA

by esther teo

GROWING up, Mr Lee Cheow Gim always had an interest in the engineering field. His father often encouraged him to find out how things worked, and ways to make them function better.

Says the 32-year-old graduate of Nanyang Technological University's School of Electrical and Electronic Engineering: "I became intrigued by the technical details governing individual components — how they are integrated to deliver effective system performance, how minor tweaks can make them more efficient and how systematic approaches can improve lives."

Mr Lee's "constant curiosity" in systems engineering and his interest in connecting with people from different technical domains made him well suited to be a project lead in the Advanced Systems Programme Centre at the Defence Science and Technology Agency (DSTA).

The defence engineer currently leads a team in the area of electro-optical (EO) sensor systems, which are used for surveillance by the Ministry of Defence (Mindef) and the Singapore Armed Forces (SAF).

He plans acquisitions, does studies on new EO technologies, and conducts prototype tests to build developmental products into robust systems. He also tracks systems and conducts performance reviews.

Working in a team

Many of his team's tasks require multidisciplinary expertise, so it works closely with project teams specialising in other technical domains, as well as other organisations within the Defence Technology Community and even global contractors.

As Mr Lee explains, EO sensor systems use photon-sensitive detectors to identify changes and contrasts in the environment, before turning what is detected into measurable and recordable signals to warn soldiers in advance about hostile actions and activities.

"EO sensor systems enhance surveillance capabilities, allowing organisations like SAF to see further, and 'see before being seen'. With the information, preventive actions can be taken promptly to reduce casualties and minimise damages to civilian property," he adds.

He was part of a team that helped equip soldiers with mobile sensors.

At the frontiers

At DSTA, the self-professed technology enthusiast gets the first scoops about current and future EO sensors system specifications.

"With a comprehensive picture of EO sensors systems available in the market, my horizons have been opened to the readiness of technologies available," he says.

In a job dealing with cutting-edge technology, Mr Lee is constantly challenged to keep up and push the boundaries of what he and his team can do.

On a personal level, he admits he had trouble initially grappling with the many terminologies, nomenclatures and technical lingo at DSTA. But his first supervisor foresaw that he would grow best under pressure, and threw him into the deep end by immersing him in an on-going project.

Mr Lee learnt the ropes quickly under his supervisor's mentorship and was able to contribute to the project with ideas that were eventually adopted and implemented.

The team faced one of their toughest challenges yet when they had to deliver sensor systems for a diverse group of SAF partners with different requirements.

Mr Lee remembers that the sheer quantity of the customised systems to be delivered made the assignment more challenging. Project management and communication skills were vital, as were commitment and innovation to develop ground-breaking technical solutions, within the budget and timeline allocated.

The team held many discussions with the different groups of operators involved to understand their varying technical requirements and expectations.

Eventually, the fleet of systems was rolled out successfully, and Mr Lee was gratified to hear positive feedback from the operators. He felt a great sense of satisfaction and accomplishment seeing how the systems he delivered improved job performances.

Mr Lee aims to further improve his technical competency in both the areas of EO and general engineering so that he can contribute better to the optimisation and development of systems at DSTA.

"I want to lead teams to develop and acquire complex, high-performance sensor systems in large-scale programmes to contribute to the defence of Singapore," he says.