INNOVATIVE NTU FINGERPRINT TECHNOLOGY TO HELP SOLVE CRIMES

Hard to detect fingerprints can now be identified and its images captured, using an innovative fingerprint detection and imaging technology developed by researchers from Nanyang Technological University (NTU) and proven to be useful by the Singapore Police Force (SPF).

Fingerprints are unique and thus useful in solving crimes. However, not all fingerprints left behind can be identified or captured using conventional methods. These include fingerprints that are too old, faint or which overlap. Present methods also cannot detect fingerprints left on backgrounds with interfering patterns and those left on certain textured paper. For example, paper on which common dollar notes are printed.

Using optical and signal processing techniques, a research team from NTU’s School of Mechanical and Aerospace Engineering led by Associate Professor Seah Leong Keey has developed fingerprint detection and imaging technology that overcomes the shortcomings of present methods – a first for Singapore.

Working with the SPF, the five-member research team of four professors and one postgraduate student has succeeded in developing a technology that is sensitive enough to provide the contrast needed to identify the most obscure and faint fingerprints, and provide clear images of these obscure fingerprints.

Trials of the NTU fingerprint detection technology and system, which took a total of two years to develop, were conducted by the SPF.

Says Deputy Superintendent Mr Lim Seng Kim, Head, Forensic Management Branch, Criminal Investigation Department, SPF, “With NTU’s novel fingerprint
technology, we can now overcome some of the limitations of existing fingerprint techniques. The results obtained were excellent and will certainly enhance Police’s capability in the recovery of latent fingerprints at crime scenes. We look forward to future collaborations with NTU.”

This research project received funding from NTU, SPF and The Enterprise Challenge, an initiative from the Prime Minister’s Office. Patents have already been filed in both Singapore and the USA for the innovative technology, which can also be adopted for other imaging applications such as those required for biomedical devices. The commercial value of this innovation is also evident as indicated by the interest shown by a few European forensics and biomedical equipment manufacturers/companies.

Says Assoc Prof Seah, “We are grateful to have had a positive impact on law enforcement and will continue to harness cutting-edge technology to improve and enhance our living environments. Our team is excited to have come up with the first such system for Singapore and hope it will bring about exciting applications for various industries, whether in Singapore or overseas.”

*** END ***

About Nanyang Technological University

Nanyang Technological University was recently ranked by the Times Higher Education Supplement at the 50th place globally and 7th in Asia, in its ranking of the 200 best universities in the world. The campus was originally developed for a Chinese language university, Nanyang University in 1955. In 1981, Nanyang Technological Institute was established on this campus to educate engineers for the rapidly developing Singapore economy. In 1991 Nanyang Technological University was inaugurated.

The university has a strong engineering school ranked among the best in the Commonwealth, a business school with one of the top 100 MBA programs in the world, an internationally acclaimed National Institute of Education, one of the best Schools of Communications and Information in Asia, and a new (2001) School of Biological Sciences playing a leading role in Singapore’s Life Sciences initiative. The Institute of Defence and Strategic Studies is an international authority on terrorism. The university is in a major expansion from 16,000 to 22,300 undergraduate students. During this expansion three new schools are being built – the School of Humanities and Social Sciences, the School of Physical and Mathematical Sciences and the School of Art, Design and Media.

A traditional strength of the university is the high employment rate and high remuneration received by its graduates. The university is now in the process of
realizing its New Undergraduate Experience initiative with a comprehensive curriculum, wide choices of options for students, vibrant campus life and international experience.

Strong international relationships and collaboration programmes is a hallmark of the university. This includes the Singapore-MIT Alliance, Singapore-Stanford Partnership, Cornell-Nanyang Institute of Hospitality Management, Singapore – University of Washington Alliance in Bioengineering, Global Immersion Programme with Peking University, Tsinghua University, Shanghai Jiaotong University, University of Washington and Georgia Institute of Technology, among many other programmes in US, China, India, Japan and Europe.

For more information, visit [http://www.ntu.edu.sg/](http://www.ntu.edu.sg/).