SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
Faculty of Engineering
Website: https://www.eng.nus.edu.sg/ece/

Area: Signal Analysis & Machine Intelligence

Host: Asst Prof Feng Jiashi

TOPIC	**:**	**ToF and Stereo Data Fusion Using Dynamic Search Range Stereo Matching**
SPEAKER	**:**	**Mr Deng Yong** **Graduate Student, ECE Dept, NUS**
DATE	**:**	**Wednesday, 21 April 2021**
TIME	**:**	**3.00PM to 4.00PM**
WEBINAR	**:**	**Join Zoom Meeting** **https://nus-sg.zoom.us/j/6626903917?pwd=dmlzYmUyQVA5cUQ1YkJpWWxFTzFPUT09** **Meeting ID: 662 690 3917** **Password: 711275**

ABSTRACT

Time-of-Flight (ToF) sensors and stereo vision systems are both widely used for capturing depth data. They have some complementary strengths and limitations, which have been exploited in prior research to produce more accurate depth maps by fusing data from the two sources. In this seminar, I will introduce an end-to-end ToF and stereo data fusion network using the coarse-to-fine matching framework, where the prior of ToF depth is integrated into the stereo matching process by constraining the search range of stereo matching within an interval around the ToF camera depth measurement.

We adopt a dynamic search range for each pixel according to an estimated ToF error map, which is more efficient and effective than a constant one when handling various errors. The ToF error map is estimated by the ToF error estimator branching out from the stereo matching network. Both ToF error estimation and stereo matching are performed in a joint framework, with the two tasks assisting each other mutually.

BIOGRAPHY

Deng Yong is a Ph.D. student at the National University of Singapore (NUS), advised by Prof. Zhou Zhiying and Prof. Feng Jiashi. His research interests include depth estimation using stereo matching, 3D human/hand pose, and other 3D vision tasks.