

## SEMINAR ANNOUNCEMENT

### DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Faculty of Engineering

Website: <https://www.eng.nus.edu.sg/ece/>

**Area: Control, Intelligent Systems & Robotics**

**Host: Assoc Prof Prahlad Vadakkepat**

TOPIC	:	Unsupervised Stereo Depth Estimation
SPEAKER	:	Mr Tarun Ashutosh Graduate student, ECE Dept, NUS
DATE	:	Friday, 27 November 2020
TIME	:	10.00AM to 11.00AM
WEBINAR	:	Join Zoom Meeting <a href="https://nus-sg.zoom.us/j/81966203589?pwd=QjZzZGZjZU8wK1kxSkJkZFBwYzBmdz09">https://nus-sg.zoom.us/j/81966203589?pwd=QjZzZGZjZU8wK1kxSkJkZFBwYzBmdz09</a> Meeting ID: 819 6620 3589 Password: 891809

### ABSTRACT

Stereo depth estimation is a key requirement for applications like autonomous vehicles. It involves calculating depth of objects making use of two synchronized views. In recent years, deep learning based methods have led to state-of-the-art methods. However, these methods require large amount of training data and have significant latency. This work addresses the issue of large amount of training data. Two unsupervised deep learning based approaches are presented here. A common algorithm underlies both of them. This algorithm alleviates the use of ground truth. The ground truths are calculated on the fly during the training period. The first unsupervised approach requires both stereo views while the second approach requires just one view. The concepts of auto-encoders, cost volume regularization and semi-global matching constitute these two methods.

### BIOGRAPHY

Tarun Ashutosh is a M.Eng student in the department of Electrical and Computer Engineering. His interest lies in the fields of data structures and algorithms, artificial intelligence, natural language processing, computer vision and full stack development.

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