**School of Industrial &**
**Intelligent Systems Engineering**
The Iby and Aladar Fleischman
Faculty of Engineering
Tel Aviv University

**בית הספר להנדסת תעשייה ומערכות נבונות**
הפקולטה להנדסה
ע"ש איבי ואלדר פליישמן
אוניברסיטת תל אביב

# Sensor Fusion for Targets Detection using LLM-based Transfer Learning Approach

Yuval Ziv, M.Sc. student at School of Industrial & Intelligent Systems Engineering
Advisor: Prof. Irad Ben-Gal & Dr. Barouch Matzliach

17 June 2025, 13:30PM via Zoom
https://tau-ac-il.zoom.us/j/83251482591?pwd=eEZ27bp3nZXXvyiyht5oknrJ2w5Vye.1

## Abstract:

Sensor fusion of LIDAR and optical data is essential for reliable target detection in autonomous vehicles, yet classical methods struggle to model the complex physical relationships between them. A new method for combining spatial data is presented that uses a Large Language Model (LLM) with Transfer Learning approach, taking advantage of its knowledge from language tasks to accomplish the task of spatial data fusion. The model's objective is to generate a more accurate and unified global target map by leveraging the contextual understanding capabilities of the transformer architecture for data fusion.

## Bio:

Yuval Ziv is a M.Sc student at the School of Industrial Engineering and Intelligent Systems at Tel Aviv University. He is conducting his research under Prof. Irad Ben-Gal and Dr. Barouch Matzliach. In addition, he works as a Data Scientist at CB4, a subsidiary of GAP.