

## סמינר ברובוטיקה 236824

In this seminar we will study recent advancements in Multi Agent Path Finding (MAPF) – The problem of coordinating the movement of a fleet of agents or robots. This decades-old family of problems, which has been intensively studied by the robotics and AI communities, has applications in diverse settings including assembly, evacuation, micro-droplet manipulation and search-and-rescue.

One specific application which we will concentrate on is the logistics domain: Modern warehouses store inventory pods where a large number of robots autonomously pick up, carry and release the pods from their storage locations to designated dropoff locations where needed goods are manually removed from the pods (to be packaged and then shipped to customers). The successful use of robots in warehouses led to a multi-billion industry led by tech-giants such as Amazon robotics and Alibaba.

In the course we will study the algorithmic aspects behind this problem. After introductory lectures on the topic, we will go over recently published work. The approaches we will study include search-based methods, SAT-based methods and more.