

Date: Monday, February 23, 2026

Time: 10:10-11:00

Location: Nano Building 51, seminar room 015

Speaker: Dr. Victor Bloch, Research Scientist at the Volcani Center – Agricultural Research Organization (ARO), Israel

Title: Challenges for Agricultural Robots

Abstract: Despite their great potential, agricultural robots face significant challenges that slow their widespread adoption. Farms present highly unstructured and dynamic environments, where varying terrain, weather, and crop types complicate reliable robot operation. Many systems still struggle with perception and decision-making in unpredictable conditions, such as distinguishing ripe from unripe fruits or avoiding obstacles like weeds and branches. High costs of development, maintenance, and adaptation to different crops also limit accessibility for small and medium farms. Additionally, the lack of standardized data protocols, safety regulations, and farmer training creates barriers to integration, requiring continued research and collaboration between engineers, farmers, and policymakers.

Bio: Dr. Victor Bloch is a research scientist at the Volcani Center – Agricultural Research Organization (ARO), Israel, specializing in robotics and automation for agriculture. He earned his B.Sc. and M.Sc. in Mechanical Engineering and a Ph.D. in Agricultural Engineering from the Technion – Israel Institute of Technology, where he developed methods for simultaneous design of orchards and harvesting robots. Following postdoctoral work at Volcani (with Prof. Ilan Halachmi) and LUKE – Natural Resources Institute Finland (with Prof. Matti Pastell), he joined ARO as a senior researcher and currently heads the Agricultural Robot Swarm Laboratory.

Dr. Bloch's research focuses on the development and adaptation of robotic systems, drones, and sensor-based automation to enhance agricultural productivity and sustainability. He has contributed to international projects on field robots, animal monitoring, and AI-driven crop phenotyping. His work aims to advance the integration of robotic technologies into real farming environments, promoting precision agriculture and sustainable food production in Israel and abroad.