Yoav Golan

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Department of Mechanical Engineering
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(website under construction)

Education

Ben-Gurion University of the Negev
Ph.D., Mechanical Engineering, 2017-Present.
Fields: Robotic Hands, Grasping and Manipulation, Motion Planning
M.Sc., Mechanical Engineering, 2015.
B.Sc., Mechanical Engineering, 2012 (Cum Laude).

Dissertation Subject

"The Design of Minimalistic Robotic Grasping Systems"
Design and analysis of planar and spatial industrial robotic grasping systems with a minimal number of links and actuators.

Teaching

Dept. of Mechanical Engineering, Ben-Gurion University
Head Lecturer, Computer Aided Design (SolidWorks), 2016-2020.
Lecturer, Intro. to Mechanical Engineering and Manufacturing for Industrial Engineers, 2019-Present.
Head Instructor, DC Motor Laboratory, 2015-Present.
T.A., Intro. to Electrical Engineering, 2017-Present.
Advisor, Senior Year Projects. 18 projects completed.

Awards

Excellence in Final Year Project, Department of Mechanical Engineering, 2015
Negev Scholarship for Ph.D. Students, 2017

Military Service

Israeli Defense Force (IDF), 2006-2011
Combat Officer (Armored Corps.), Platoon Commander.
Instructor, Officers' Training Course
Active Reserve Duty,. 2011-Present, Current Rank: Captain.

Other Activities

Mentor, Excellence Program for Gifted High-School Students, Israeli Ministry of Education, 2016-2019.
3 Term Student Council Member (Elected Position), Ben-Gurion University Student Union, 2013-2016.
Chairman, Board of Directors, Ben-Gurion University Student Union (Elected Position), 2016.
Volunteer, Israel Guide Dog Center for the Blind, 2013-2014.

Languages

English (native), Hebrew (native)

Publications (By Chronological Order)

Armin Shmilovich and Yoav Golan, "15 Years of RoboCup Competitions - Measuring Progress in Multi-Robot Development" in Bar-Ilan Symposium on Foundations of Artificial Intelligence (BISFAI), Bar-Ilan University, 2013.

Yoav Golan, Elon Rimon, and Amir Shapiro, "N-Dimensional Configuration Space Robot Navigation using Artificial Temperature Gradients" in Israeli Conference on Robotics (ICR), Herzliya, 2016.

Yoav Golan, Amir Shapiro, and Elon Rimon, ""Dual Frictionship" Convertible Frictionless to Frictional Fingertips to Improve Robot Grasp Robustness", in IEEE International Conference on Robotics and Automation workshop on Exploiting Contact and Dynamics in Manipulation, Stockholm, Sweden, 2016.

Yoav Golan and Amir Shapiro, ""Krembo" Wrapping Machine for Production Lines of Delicate Marshmallow Treats" in the Israeli Conference on Mechanical Engineering (ICME), Technion Institute of Technology, 2016.

Yoav Golan, Shmil Edelman, Amir Shapiro, and Elon Rimon. "Online Robot Navigation Using Continuously Updated Artificial Temperature Gradients", IEEE Robotics and Automation Letters 2, no. 3 (2017): 1280-1287.

Hallel Bunis, Elon Rimon, Yoav Golan, and Amir Shapiro. "Caging polygonal objects using equilateral three-finger hands" IEEE Robotics and Automation Letters 2, no. 3 (2017): 1672-1679.

Yoav Golan, Amir Shapiro, and Elon Rimon, "Object Pose Estimation by Contact with Orientation-Sensing Robotic Fingertips" in IEEE International Conference on Robotics and Automation workshop on The Robotic Sense of Touch, Singapore, 2017.

Yoav Golan, Amir Shapiro, and Elon Rimon, "Object Surface Exploration Using Low-Cost Rolling Robotic Fingertips" in IEEE Haptics Symposium, San Francisco, 2018.

Hallel Bunis, Elon Rimon, Yoav Golan, and Amir Shapiro. "Caging polygonal objects using Formationally Similar Three-Finger Hands" IEEE Robotics and Automation Letters 3, no. 4 (2018): 3271-3278.

Yoav Golan, Odded Geffen, Shai Gordon, and Amir Shapiro, "Utilizing Mechanical Filters for a Single-Input Multiple-Output Under-Actuated Mechanical System" in the Israeli Conference on Mechanical Engineering (ICME), Be'er Sheva, Israel, 2018.

Yoav Golan, Ben Serota, Amir Shapiro, Oren Shriki and Ilana Nisky, "A Vibrotactile Vest for Remote Human-Dog Communication" in 2019 IEEE World Haptics Conference (WHC), pp. 556-561. IEEE, 2019.

Yoav Golan, Ben Serota, Amir Shapiro, Oren Shriki and Ilana Nisky, "Dogs Can Understand Haptic Communication" in Proceedings of the Sixth International Conference on Animal-Computer Interaction, pp. 1-6. 2019.

Yoav Golan, Amir Shapiro and Elon Rimon, "Jamming-Free Immobilizing Grasps Using Dual-Friction Robotic Fingertips" in IEEE Robotics and Automation Letters 5, no. 2 (2020): 2889-2896.

Yoav Golan, Amir Shapiro and Elon Rimon, "A Variable-Structure Robot Hand That Uses the Environment to Achieve General Purpose Grasps" in IEEE Robotics and Automation Letters 5, no. 3 (2020): 4804-4811.

Patents

Yoav Golan, Amir Shapiro and Elon Rimon, "Convertible Frictionless to Frictional Fingertips for a Gripper to Improve Robotic Grasp Robustness" U.S. Patent 10,464,218, issued November 5, 2019.

Yoav Golan, Amir Shapiro, Noam Hasson and Elon Rimon, "Adhesive Based Gripping of Objects", patent pending final approval.

Yoav Golan, Amir Shapiro, Gal Levy and Elon Rimon, "Sequentially Restructurable Gripping Device", provisional patent.