Yael Ben Shalom

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EDUCATION

MS in Robotics, Northwestern University, IL *Sep 2020 - Dec 2021 (Expected)*

- Featured courses – Machine Learning, Robotics Manipulation, Embedded Systems, and Dynamics.

BS in Mechanical Engineering, Tel-Aviv University, Israel *Sep 2014 - Jul 2018*

- Majored in Robotics and Autonomous Systems – Dynamics, Mechatronics, and Control.

PROFESSIONAL EXPERIENCE

Mechanical Engineer, R&D Department, Elbit Systems *Jun 2016 - Jul 2020*

- Designed the electrical-packaging of 5 electro-optic systems in core $4M products, with 100+ units each.
- Conducted heat dissipation and structural integrity simulations of parts, mechanisms, PCBs, and experimental equipment.
- Developed 3 award-winning mechanical concepts, that each received $250K grant from the Israeli Chief Scientist.
- Initiated a study to reduce manufacturing time and costs of 3D-printed products. Reduced 3D-printed prototype's costs by 50% by introducing new materials, increasing printers' utilization, and optimizing printing requirements.
- Formulated the department's training program for incoming engineering interns, and mentored 3 trainees.

Deputy Project Manager, Intelligence Corps Technological Unit, Israel Defense Forces *Nov 2012 - May 2013*

- Managed a full product development life-cycle from research to delivery in a tight schedule.
- Coordinated a cross-functional team of 100+ people from 7 different disciplines to complete the mission.
- Received the Department Manager's Award (Colonel) for Outstanding Performance and Leadership.

Electronics Technician, Intelligence Corps Technological Unit, Israel Defense Forces *Nov 2010 - Nov 2012*

- *Served as the team-leader's expert on electro-optic systems manufacturing.*
- Specialized in research, development, manufacturing and integration of electro-optic systems.
- *Performed quality assurance (QA) and hardware testing, circuit board manufacturing and soldering.*

SELECTED PROJECTS

Rapidly-Exploring Random Tree (RRT) – Northwestern University

AI, Randomized Algorithms, Path planning, Linux, Python

- Implemented an artificial intelligence RRT path-planning algorithm for constrained movement and obstacle avoidance.
- Coded exploration algorithms for both 2D and 3D spaces with randomly sized and shaped obstacles.

Robotic Arm Control Using Computer Vision Perception – Northwestern University

Robotic Manipulation, Motion Planning, Computer Vision, Range Imaging, Linux, Python, ROS

- Developed computer vision algorithm for recognizing the 3D location of a pen, using a D435i depth-camera.
- Programmed and controlled a PincherX robotic arm to accurately seize the pen under varying conditions.

Robot Navigation and Control inside a Maze, Mechatronics Project – Tel-Aviv University

Autonomous Vehicle, AI, Motion Planning, Path Planning, Arduino, C++

- Built a wheeled robot and programmed it to navigate autonomously through an obstacle course using an embedded microprocessor, motors, and distance sensors (IR, TOF and ultrasonic). Applied real-time adaptive motion control.

Robotic Manipulation and Motion Planning Projects – Tel-Aviv University

Robotic Manipulation, Motion Planning, Path Planning, Feedback Control Systems, Python, Matlab, Simulink

- Programmed a robotic arm (Denso VP-G Series and WincapsIII simulator) to pick up multi-shape objects, recognize different elastic surfaces, and write words, using forward and inverse kinematics and PID closed-loop control.

SKILLS & ADDITIONAL INFORMATION

- Programming and Robotics: Python, Matlab, Simulink, Robot Operation System (ROS), Git, Linux, Arduino.
- Mechanical Engineering: Solidworks, Inspire, Ansys, CFDesign, Visualize, 3D-printing.
- Electrical Engineering: QA and hardware testing, circuit boards manufacturing, soldering.
- Mentor for "Cracking the Glass Ceiling", empowering underprivileged young women to pursue science education.
- Interested in carpentry, hiking (hiked Everest, Tour Mont-Blanc, and Pyrenees GR11) and yoga.