Yair Nahum

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GitHub: https://github.com/ynahum

Education & Qualifications

2020-2025: completed M.sc degree in AI and robotics with excellence (Average 91.3) at the Technion Electrical and Computers' Engineering faculty.
2001-2006: completed B.sc computers engineering degree with excellence (Average 88.6) at the Technion Computers' Science faculty.
2019-2020: RL specialization (4 courses specialization) by The University of Alberta, Deep learning specialization by deeplearning.ai and Machine Learning by Stanford University (Andru NG) on Coursera. LLMs engineering mastery on Udemy.

Work Experience

2012-Now – Intel Israel Haifa – SATG (SW Advanced Technologies Group) FLEX – Staff Senior SW engineer:

- Real Sense – POC of RGB+DEPTH video streams over Ethernet using DDS protocols and standard (used by ROS2 topics) in Real Time embedded environment w/ FreeRTOS . Also, bring up ETH protocol POC and demo to replace an FPGA board (Bridge) used by camera vendors to connect to Nvidia Jetson HSB protocol as Real Sense already have the ETH interface on chip.
- Mobileye validation team – enabled network stack in RT embedded environment.
- Intel Labs group – POC of optical flow 3D feel for video conferencing over AWS services (EC2, Kubernetes). Designed, implemented and tested cloud C++ SW for uploading several cameras streams, trigger OF algo and stream to clients.
- IPU HW simulator team as a Senior SW engineer - Developed HW kernels models for simulating HW as SDK (for SW/FW development on top). Exceeded expectations, promoted and was rewarded on execution with urgency. Established new IPU Sim infrastructure and MOW in the team.
- Real Time embedded FW engineer in the Skylake SOC Camera subsystem - Developed FW controlling the numerous different image processing kernels in the pipe. Also, DSP w/ SIMD simple kernels. Integrated and debugged the FW on Windows OS environment (with the driver team) and root caused major blocking bugs.

2006-2012 – Zoran corporation – Worked as a Real Time embedded system FW engineer (ThreadX RTOS) at the Digital Still/Video Cameras FW group:

- Developed the codec (encoding and decoding) of Mpeg4/1 video standards for movie record/play modes.
- Implemented the algorithm for digital video stabilization (DVS).
- Lens distortion correction, image mix and image correction HW blocks drivers' development for several generations.

Military Service

1996-2000 – Tanks' Platoon commander in the IDF armored forces, Company commander's deputy. In the Army reserves as Captain, mortars' Platoon commander in between 2000-2014.

Skills

Languages: Hebrew – native, English – fluent,
Frameworks: Nav2, ROS2, Google Collab, Matlab, Simulink, PyTorch, TensorFlow, Keras, different RTOS
Script & Programming Languages: Strong in Python, Modern C/C++11/14. Also, C#, Java.
Environments: Testing and running simulations in Unix/Linux/Windows OS environments with Git,GitHub, google tests.
Robotics: control - MPC,MPPI, Pure Pursuit, PID. **Motion Planning –** RRT/RRT*,LazyA*,PRM..
AI/ML: LLMs -RAG, Tools, Agentic, Fine tune Frontier and Open-Source models

Final Project

Integrated the ROS 2 Navigation (Nav2) stack, and Developed custom ROS 2 nodes in C++/Python for real-time, sampling-based control of an autonomous race car simulation platform (F1TENTH AutoDrive Sim racing League).
Integrated the Model Predictive Path Integral (MPPI) controller with Nav2's modular framework (BT Navigator, costmaps, transforms, map server) replacing the default controller.
Validated performance in simulation environments, demonstrating smoother trajectories, better handling of sharp turns, and adaptive behavior under dynamic scenarios.
https://github.com/ynahum/mrs_project_container

Patent

https://patents.google.com/patent/US20250077298A1

Interests & Activities

Robotics enthusiast (control, motion planning, SLAM), Reinforcement learning, Computer Vision, Deep learning (specializing in NN, CNN and RNN). Eager to transition to these domains also in the industry, contribute, learn and improve.
Believes in collaboration and teamwork with a good atmosphere and w/o high egos.
For recommendations I can give the names of my managers/colleges. Also, grades sheets of relevant courses can be provided.

בית הספר לתארים מתקדמים ע"ש אירווין וג'ואן ג'ייקובס
Irwin and Joan Jacobs **Graduate School**

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Ongoing Transcript

YAIR NAHUM, ID 034462796

Studies towards the Degree of **MASTER OF ELECTRICAL ENGINEERING** in the Department of Electrical and Computer Engineering

Path: Non Thesis

Course No.	Course Name	Credits	Grade	Level	Semester
00460195	Machine Learning	3.5	90	Joint	2019-2020 Winter
00460003	Advanced Topics 1	1	92	Joint	2019-2020 Spring
00460202	Data Analysis	3	75	Joint	2020-2021 Winter
02180000	Research Ethics	0	Pass	Graduate	2020-2021 Winter
03280011	Advanced English	0	Pass	Graduate	2020-2021 Winter
00460203	Planning and Reinforcemet Learning	3	92	Joint	2020-2021 Spring
00460746	Algorithms and Application in Computer Vision	3	90	Joint	2020-2021 Spring
00480887	Introduction to Departmental Research	1	96	Graduate	2020-2021 Spring
00460211	Deep Learning	3	94	Joint	2021-2022 Winter
02360330	Introduction to Optimization	3	95	Joint	2021-2022 Spring
02360501	Introduction to Artificial Intelligence	3	84	Joint	2021-2022 Spring
00460212	Introduction to Robotics	3	91	Joint	2023-2024 Winter
02360901	Algorithmic Robot Motion Planning	2	89	Joint	2023-2024 Winter
00460213	MOBILE ROBOTS	3	94	Joint	2023-2024 Spring
00460214	PROJECT IN MOBILE ROBOTS	1	100	Joint	2023-2024 Spring
00480990	Seminar 1	3	97	Graduate	2024-2025 Winter
00490005	Control Topics Laboratory	2	97	Graduate	2024-2025 Winter
00860761	Vision-Aided Navigation	3	95	Joint	2024-2025 Winter

Final Course Average: 91.3

Grade Scale: 0-100

Minimal Passing Grade is 65

Haifa, August 26, 2025