Maor Assayag

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Senior R&D Team Lead with 6 years of experience building scalable distributed systems in the Israeli Navy R&D Unit; one of the Navy's top-decorated technological officers for innovation and leadership.

Education

University of Haifa Israel

Master of Science in Marine Technologies, with Honors (Dean's List) *2023-2025*

- Subjects in Digital Signal Processing, Machine Learning, and Deep Learning.
- Research on predictive models (LSTMs, GMM-HMM, Transformers) to uncover statistical and temporal dependencies in sperm whale vocalizations (CETI initiative); Accepted for publication (Bioacoustics), in-press.

Ben-Gurion University Israel

Bachelor of Science in Computer Engineering *2015-2019*

Skills

Languages – Kotlin, Python, Java, Go, C++, C#, MATLAB, TypeScript/JavaScript
Backend – RabbitMQ, MongoDB, Prometheus, Grafana, REST, WebSocket, Ktor, encoding/compression/encryption
Frontend – Angular, React, Socket.IO, Tailwind CSS, RxJS, UI/UX design
AI/ML – PyTorch, TensorFlow, Transformers, LSTMs, sequence modeling, feature engineering, synthetic data, RAG
Digital Signal Processing – modulation (AM/FSK/PSK/QAM/OFDM), low-SNR detection, spectrum analysis
Systems – Distributed/real-time systems, concurrency, microservices, custom networking protocols
Infrastructure – Git, Docker, Nomad, Consul, Vault, Fabio, Azure

Experience

R&D Team Lead May 2020 – June 2025

Israeli Navy R&D Unit

- Led a cross-functional, award-winning division of 20+ engineers (full-stack, algorithms, QA), mentoring Team Leads while serving as the lead for multiple Agile R&D squads, fostering a culture of ownership and engineering excellence.
- Architected national communication systems, scaling from a single ship to fleet-wide deployment, doubling team size and scaling projects and domains 3x; recognized with multiple excellence and innovation awards.
- Delivered 17-hour cycles of leadership and technical execution, ensuring consistent progress across all major projects as the primary architect and lead code contributor.
- Developed full-stack systems with low-level interface control, delivering 40+ concurrent scalable microservices using `Kotlin`, `Go`, `Java`, `Python`, `Angular`, `REST`, `WebSocket`, `RabbitMQ`, `MongoDB`, and `Prometheus/Grafana`.
- Developed a real-time communication system and conducted DSP research for audio decoding (low-SNR, Doppler, channel estimation), reducing message turnaround by 95%, from 30 minutes to seconds.
- Engineered resilient messaging protocols (encoding, compression, parsing, fragmentation, encryption), optimized throughput 4x and transmission latency by 80% on a nationally strategic RF band.
- Engineered robust orchestration for containerized distributed systems, achieving zero-downtime deployments and automatic recovery using Nomad, Consul/Fabio, and Vault.
- Led UI/UX across teams and projects, scaling development capacity 3x and improving consistency by standardizing reusable, pixel-perfect patterns and components.
- Owned CI/CD pipelines, cutting deployment time by 70% with `JFrog Artifactory`, `Azure DevOps`, and `Docker`.
- Recruited 300+ young talents for unit enrollment, covering roles including engineers, data scientists, and QA.

Full-Stack Engineer Oct 2019 – May 2020

Israeli Navy R&D Unit

- Engineered a new digital encryption full-stack system (Kotlin/Java), cutting sensitive data transmission latency by 98% (60x) and achieving fleet-wide deployment in record time; earned an innovation award.
- Reverse-engineered legacy C++ compression, enabling backward compatibility for payload fragmentation protocol.
- Architected monitoring solution (Prometheus/Grafana) for 15+ microservices, tracking metrics across mediums.

Projects

GenAI Financial Assistance | *Python, RAG, LLM APIs, Supabase* 2026

- Engineered a RAG-based assistant integrating prompt orchestration, vector retrieval, and contextual workflows to generate actionable insights for B2C operations.

transmit-OFDM | *Python, SciPy* 2024

- OFDM pipeline for acoustic modem transmission (pilot insertion, cyclic prefix, FFT-based equalization).

morse-deep-learning | *Python, PyTorch* 2024

- Detect and decode Morse code signals using LSTM-RNN and RCNN under noisy channel conditions.

ngx-beautify-cursor | *Angular, TypeScript* 2022

- NPM Angular/TypeScript library for customizable web cursors.

chartjs-plugin-cyclic-axis | *JavaScript, Chart.js* 2021

- NPM Chart.js plugin enabling cyclic-axis pan for scatter charts.

Community

Consultant Jan 2022 – June 2025
Israeli Navy R&D Unit

- Led pilots to integrate diverse talent (*"Specials in Uniform"*, *"Vertex"*) into the technological unit.

Honors & Awards

University of Haifa *M.Sc., Dean's Honors for Graduate Academic Excellence* 2026
University of Haifa *Master's Outstanding Excellence Award* 2025
IDF Chief of the General Staff *Excellence Technological Award - first in the Israeli Navy history* 2023
Israeli Navy Commander in Chief *Award for Creativity, Innovation and Excellence* 2022
Israeli Navy R&D Brigade *Excellence Award* 2022
Israeli Navy Control Unit Commander *Special Contribution Commendation* 2022
Israeli Navy Computer and Software Development Center *Excellence Award* 2021
Ben-Gurion University *B.Sc Engineering Project Departmental Representative & Audience Favorite* 2019