

Ran Benayoun

054-6137350 | ranbenayoun@gmail.com | <https://github.com/ranbenayoun>

Biomedical Engineering B.Sc. graduate with hands-on experience in medical device R&D, software testing, and data analysis. Proficient in **Python** and **MATLAB**, with a strong background in cross-functional collaboration and technical operations.

Experience

Researcher & Lab manager - Technion

2025 - 2026

- Developed chemical kinetic models using open-source **Python**-based software simulations.
- Characterized, built, and deployed **LLMs** and **AI Agents**. Built local **LLMs**.
- Managed lab logistics, technical operations, and administration.
- Participated in research grants and funding proposals, domestic and abroad.

Clinical R&D Engineering Student - Philips

2024 - 2025

- Worked on AI explainability (**SHAP**, **LIME**) using **Python** and **TensorFlow**.
- Built a brain mask segmentation algorithm for MRI using open-source databases and applied explainability methods to understand model intent on images.
- Deployed **LLMs** and explored AI explainability in the context of **Large Language Models**.
- Conducted clinical evaluation of models across large datasets of dozens of cases.
- Developed **Python** GUI automations using **PyAutoGUI** to automate testing and results gathering.
- Modified application source code to evaluate brain mask metrics.
- Constructed a data inspection pipeline to visually map and inspect data, applying metrics to screenshots. Successfully caught errors in masks and ground truths through this pipeline.
- Wrote comprehensive Clinical Evaluation Plans and Reports detailing methodologies, data selection, and results to accompany FDA submissions.
- Performed **statistical evaluation** on clinical data.

SW Verification & Automation Engineering Student - Philips

2023 - 2024

- Specialized in software testing, test case creation, execution, and defect resolution.

Application and Professional Services Student - Medicvision Imaging Solutions

2021 - 2023

- Provided real-time remote customer support and monitored **Linux**-based systems for seamless functionality.
- Developed **Python** automation scripts to parse MRI protocols from PDFs in clinical settings.
- Optimized MRI scan times by automating the extraction and adjustment of protocol parameters to work synergistically with enhancement algorithms.
- Gained deep foundational knowledge in **Linux** and pipeline automation.

Ground Defense Officer - IDF, Air Force

2014 - 2018

- Captain in reserve.
- Managed platoons, war rooms, drills, and routine security operations.

Ran Benayoun

054-6137350 | ranbenayoun@gmail.com | <https://github.com/ranbenayoun>

Projects

Biodesign Israel (Finals Project)

- Identified a critical clinical need regarding ventilation-associated pneumonia in hospitals through extensive interviews with medical professionals.
- Key contributor in prototype development, user needs specification, and detailed device specifications.
- Defined all physical and functional attributes for the product.
- 3D modeled and built a physical prototype.
- Analyzed financial and competition models and presented the final product concept to stakeholders.

iGEM, International Synthetic Biology Competition

- Technion Team - Ranked top 10 teams worldwide.

WhatsApp Job Posting Analysis

- Addressed the misconception of low job availability in **Biomedical Engineering**.
- Extracted text from WhatsApp groups and used AI tools to construct comprehensive analytical reports.
- Systematically analyzed metrics such as jobs per month, types of jobs, and academic background required.
- Published findings in an accessible format to showcase actual market demand.

Hardware & IoT Projects

- Extensive experience with **ESP32** and **Raspberry Pi** microcontrollers.
- Developed a media hub using **Raspberry Pi** connected to a home network to handle and share videos.
- Integrated various hardware components with **Raspberry Pi** including cameras, buttons, and controlling a 3D printer.
- Built numerous **ESP32** projects utilizing Bluetooth, Wi-Fi, and deep sleep functions.
- Designed systems with multiple communicating **ESP32** boards and integrated external drivers and ICs.
- Built a 3D scanner using an **ultrasonic time-of-flight sensor** for precise acoustic and distance measurements.

Education

Technion

B.Sc. ****Biomedical Engineering****, minor in Entrepreneurship | 2019 - 2024

Skills

Python, C++, JavaScript, SQL, MATLAB, TensorFlow, PyTorch, LLMs, AI Agents, SHAP, LIME, AI Explainability, React, Flask, Linux, Git, PyAutoGUI, ESP32, Raspberry Pi, 3D Printing, 3D Modeling, Hardware Integration, Sensors/ICs, Ultrasonic Time-of-Flight Sensors, Clinical Evaluation, System Engineering, Biomedical Engineering, Statistical Data Analysis