Itay Wainer

BIOMEDICAL ENGINEER · VERIFICATION ENGINEER

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Biomedical engineer (B.Sc.) working today as a verification engineer on PET imaging systems at GE HealthCare, where the work is deliberately multi-disciplinary: mechanics, electronics, physics, image quality and clinical use in one system. My academic and project work is human-centered biomechanics and measurement — ANSYS stress analysis of diabetic foot models, an EMG/EEG study on BioPac, ECG signal-processing algorithms in MATLAB, and a full mechanical-plus-electronics device built from scratch. I like building the measurement setup myself, analysing the data, and explaining what it means to people who are not engineers.

EXPERIENCE

Verification Engineer — GE HealthCare

MAY 2025 – PRESENT

- Test PET medical products across mechanics, electronics, physics, software, image quality and radiation safety — a genuinely multi-disciplinary device, tested against real clinical use.
- Design the test approach for each area: decide which measurement setup, environment and tools are needed, then plan and run the tests against system and sub-system requirements.
- Analyse and debug failures across the whole stack, find root cause, and follow issues to closure together with the design and development teams.
- Turn test data into clear written reports and findings for engineers and program stakeholders, so decisions can be made without re-reading the raw data.
- Work with partial and evolving specifications, switching between tasks and blocks as program priorities change, in close collaboration with teams in Israel and abroad.

RESEARCH & ENGINEERING PROJECTS

- **Biomechanics of the diabetic foot (ANSYS):** built finite-element models of foot anatomy and ran stress analysis to see how tissue loading changes between cases — connecting anatomical variation to mechanical outcome.
- **EMG / EEG human study (BioPac):** designed and ran an experiment on how music affects muscle activity — wrote the protocol, recorded muscle and brain signals from participants, then processed the data and presented the results.
- **Smart pill dispenser (final project):** designed a full device from scratch — SolidWorks 3D model and mechanical strength testing, electronics and control, plus a web interface for monitoring, written in HTML, Python and C.
- **Signal processing and imaging (MATLAB):** algorithms to remove noise from ECG recordings and to enhance medical images, and a tool that displays biomedical signals in real time.

EDUCATION

B.Sc. Biomedical Engineering — Afeka Academic College of Engineering

2021 – 2025 · GPA 80

CORE SKILLS

- **Biomechanics:** tissue loading, FEA of anatomy, human factors
- **Experiments:** protocol design, human-subject testing, data collection
- **Analysis:** signal processing, algorithms, data visualization
- **Measurement:** EMG, EEG, ECG, strain, biomedical sensors, DAQ setup
- **Code:** Python, MATLAB, C, HTML; basic Linux
- **Hardware & CAD:** SolidWorks, ANSYS, Arduino rigs, electronics integration
- **Self-directed:** own a task end to end; learn new domains fast
- **Teamwork:** cross-team work; explain findings to non-specialists

MILITARY SERVICE

Regimental Combat Medic, Jordan Valley Brigade (2015–2018)

LANGUAGES

Hebrew — native · English — fluent (spoken and written)