Ronel Herzass

ENGINEERING INTERN

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ABOUT

I am a motivated Electrical Engineering student specializing in digital signal processing, embedded systems, and software development with hands-on experience in Python, C++, and Arduino-based circuit design. My approach combines technical problem-solving with collaborative leadership, demonstrated through mentoring youth robotics teams and developing an audio analyzer tool that helps students visualize FFT principles, reflecting my commitment to innovation and knowledge-sharing in engineering education.

SKILLS

Python	Technical Communication	Analog & Digital Circuit Design
C/C++	FFT Analysis & Implementation	Arduino Development
MATLAB	Audio Signal Processing	Problem-Solving

EDUCATION

B.Sc. Electrical Engineering - Ariel University | 2022 - Present

Specialization in Signal Processing and Communications with coursework in DSP, random signals & noise, and communication systems.

PROJECTS

Audio Sample Analyzer - Educational Tool for Students Independent Developer

Developed an interactive audio signal analyzer to enhance student understanding of FFT concepts and frequency domain analysis, providing real-time visualization of audio signals and spectral components using Python and DSP libraries. Successfully demonstrated practical applications of digital signal processing principles for educational purposes.

Free Electron Laser Simulation Optimization - Schlesinger Accelerators Center

Research Assistant

Translated and optimized particle beam simulation code from Python to C++, achieving significant performance improvements through algorithm optimization and efficient memory management. Enhanced computational efficiency for electron behavior modeling in FEL research while contributing to electron accelerator maintenance operations.

Automated Battery Switching System - Motor Efficiency Research Lab

Research Assistant

Designed and implemented a custom PCB interface with Arduino firmware to create an automated switching system for battery charging devices in SOC/SOH research, utilizing Arduino, PCB design tools, and C programming. Extended MATLAB analysis scripts for motor parameter characterization, contributing to battery efficiency optimization studies.

EXPERIENCE

Science Instructor - Technoda Medicine and Science Museum **2023 - Present**

Improved student comprehension of complex STEM concepts measured by enhanced engagement and project completion rates by designing hands-on experiments and mentoring FLL robotics team through parallel workflow strategies across programming, mechanical, and research sub-groups.

LANGUAGES

English - Native
Hebrew - Native

ISRAELI AIR FORCE - SPOKESPERSON UNIT 2017 – 2020

Coordinated strategic media operations as Technical Branch spokesperson, managing multi-level communications with emphasis on message precision and stakeholder coordination.