

ROHEEN SHARIFI

Leesburg, VA | 703-593-4536 | roheensharifi39@gmail.com | LinkedIn

EDUCATION

Virginia Polytechnic Institute and State University Expected May 2028 B.S. Biomedical Engineering | Blacksburg, VA

EXPERIENCE

Undergraduate Research Assistant - Exoskeleton Biomechanics Aug. 2026 - Present *Virginia Tech - Occupational Ergonomics & Biomechanics Laboratories* | Blacksburg, VA

- Conduct biomechanics research on rigid and soft back-support exoskeletons for an NSF-funded study of symmetric and asymmetric lifting mechanics.
- Operate and troubleshoot Vicon Nexus motion capture and AMTI force platforms; validate marker trajectories, synchronized ground-reaction forces, and experimental setup.
- Develop a SOLIDWORKS exoskeleton model for OpenSim integration, recreating rigid components and joint behavior for biomechanical simulation.
- Build Python data-processing and visualization workflows; support pilot testing, marker placement, and IRB-compliant study preparation.

Founder - APHELION 2026 - Present *Creative Digital Studio* | Remote

- Founded a studio creating high-end digital experiences across design, technology, motion, and interactive media; lead strategy, product design, technical architecture, development, and deployment.
- Build digital products with Next.js, React, TypeScript, PostgreSQL/Supabase, APIs, Vercel, automation, and AI-assisted development workflows.

AI Automation & Web Design Intern - MyGuyGus Aug. 2026 - Sep. 2026 *Northern Virginia* / Remote

- Built and deployed responsive websites for a startup portfolio using Next.js, React, TypeScript, Supabase/PostgreSQL, and Vercel.
- Translated AI, automation, and B2B services into reusable interfaces, lead-capture workflows, and database integrations; supported QA and production deployment.

BIOMEDICAL ENGINEERING & AI PROJECTS

Cortana Health - AI Clinical Learning Prototype cortana.health *VT Hacks* | Next.js, React, ElevenLabs, Twilio, JSON, Zod

- Built a conversational clinical learning prototype with interactive voice and text rounds, evidence-linked practice, and phone-based briefings using ElevenLabs and Twilio.
- Connected DAPA-HF learning content to two source publications, with answer feedback, learning-history tracking, and rule-based reinforcement and spaced review.
- Implemented schema-validated JSON scenario ingestion and 15 synthetic scenarios spanning cardiology, operations, and escalation, sharing active context across web and phone.

Wearable Parkinson's Tremor Detection System June 2026 *ESP32, MPU6050, Arduino/C++, Python, Signal Processing*

- Engineered a wrist-mounted IMU prototype with RMS, dominant-frequency, tremor-band, and harmonic features; built labeled-data classification workflows and a live mobile dashboard for tremor-like vs. voluntary motion.

Multimodal Stress & Physiological Arousal Detection System Apr. 2026 *ESP32, MAX30102, Grove GSR, Python, scikit-learn*

- Integrated synchronized photoplethysmography and electrodermal activity sensing; engineered heart-rate, conductance, variability, and statistical features for supervised stress-like vs. baseline classification.

Real-Time Heart Rate & SpO2 Monitoring System Mar. 2026 *ESP32, MAX30102, SSD1306 OLED, Arduino/C++, Python*

- Built an embedded PPG prototype for pulse-wave, heart-rate, and SpO2 acquisition with live OLED display and Python serial logging, smoothing, calibration, and analysis.

CERTIFICATIONS

Biomedical & Research: CITI Biomedical Research (Virginia Tech, Aug. 2026); Medical Image Processing - MathWorks; Foundations of Healthcare Systems Engineering - Johns Hopkins. **Computing:** Google AI Essentials; Crash Course on Python - Google; CompTIA ITF+.

TECHNICAL SKILLS

Programming: Python, TypeScript/JavaScript, SQL, MATLAB, Java, Arduino/C++

Software & Product: Next.js, React, React Native, Expo, Supabase/PostgreSQL, REST APIs, Git/GitHub, Vercel, Stripe

Biomechanics & Modeling: Vicon Nexus, OpenSim, SOLIDWORKS, optical motion capture, AMTI force platforms

Embedded & Biomedical: ESP32, MAX30102 PPG/SpO2, MPU6050 IMU, Grove GSR, I2C, serial acquisition

Data & ML: Signal processing, feature extraction, supervised learning, pandas, scikit-learn, matplotlib

Creative Technology: Blender, AI-assisted development, rapid prototyping, interactive digital experiences