Evangelia Kahremanis

evangeliakah@gmail.com | linkedin.com/in/evangelia-kahremanis | github.com/evangeliakah

EDUCATION

Columbia University New York, NY
M.S. Biomedical Engineering, Neural Engineering *Expected Dec 2026*
- Dean's M.S. Academic Excellence Fellowship

University of Michigan Ann Arbor, MI
B.S. Neuroscience; B.S. Modern Greek Language and Literature *Aug 2024*
- Carrie Arbour Scholarship; N2N Neuropsychology Prize; University Honors

TECHNICAL SKILLS

Programming: Python (NumPy, SciPy, pandas), C++, MATLAB, Git/GitHub
Machine Learning & Deep Learning: PyTorch, TensorFlow, scikit-learn; CNNs, MLPs, Random Forests, time-series forecasting, cross-validation, model evaluation
Signal Processing & Modeling: EEG, EMG, ECG, PPG, digital filtering, Fourier analysis, time-series analysis, computational neuroscience; SPM, Brainstorm, NiBabel, Nilearn
Hardware & Product Development: Arduino, physiological sensors, analog circuits, circuit prototyping, soldering, sensor calibration, data acquisition, human factors engineering, medical-device design controls
CAD & Fabrication: SOLIDWORKS (CSWA expected Dec 2026), FDM 3D printing, CNC milling, laser cutting

RESEARCH EXPERIENCE

Robotics and Rehabilitation Laboratory (ROAR), Columbia University New York, NY
Research Assistant *Jun 2026 – Present*
- Developed a Random Forest gait classifier in Python (scikit-learn) using 12,000+ strides from 24 subjects, achieving 53.5% baseline accuracy across 11 walking conditions with leave-one-subject-out cross-validation.
- Cleaned and validated 13,500+ stride records, identified key biomechanical predictors, and began evaluating treadmill versus overground classification strategies for adaptive gait rehabilitation.
- Assist in collecting wireless surface EMG data during biceps curl trials, comparing free-weight and cable-driven robotic assistance to characterize muscle activation under assisted resistance.

SELECTED ENGINEERING PROJECTS

Embedded Physiological Sensing & Instrumentation Fall 2026
- Integrated a MAX3010x optical sensor with an Adafruit Feather M0, configuring 200 Hz sampling for red/IR PPG acquisition and real-time pulse waveform visualization.
- Built an Arduino-based thermistor circuit with a Wheatstone bridge and Steinhart-Hart calibration; evaluated measurements at 4 temperatures (35–40°C) and compared 10- and 100-point moving-average filters.

AuraSense | EEG-Based Seizure Prediction Wearable Spring 2026
- Co-developed a noninvasive EEG wearable concept for ML-based seizure prediction, defining system architecture, technical specifications, and prototyping strategy.
- Led human-factors research, interviewing 7 of 12 recruited patients to translate user needs into engineering requirements; contributed to medical-device classification and regulatory design considerations.

Multimodal Neuroimaging of Multilingualism Spring 2026
- Analyzed multimodal MRI data from 51 participants using structural MRI (VBM), diffusion MRI (TBSS/FA), and resting-state fMRI to investigate relationships between multilingual experience, brain structure, and functional connectivity.
- Applied voxelwise regression and multiple-comparison correction, identifying an FDR-significant association between balanced language use and reduced superior frontal gray-matter volume ($p = 0.010$; 1,160-voxel cluster).

PROFESSIONAL EXPERIENCE

Columbia University, Department of Biological Sciences New York, NY
Teaching Assistant, Cellular and Molecular Neurobiology *Sep 2026 – Present*
- Support a 100+ student course through weekly office hours, exam proctoring, and neuroscience concept guides covering neuronal electrophysiology, synaptic transmission, and sensory systems.

Grind House Manhattan New York, NY
Personal Trainer *Feb 2026 – Present*
- Design and lead individualized 60-minute training sessions, applying biomechanics, force-vector analysis, joint torque, and exercise physiology to optimize movement efficiency and athletic performance.
- Interpret wearable-derived metrics (HRV, resting heart rate, sleep, training load) to inform training intensity, recovery, and evidence-based wellness recommendations, including nutrition and supplementation.

National Hellenic Student Association of America Remote
Information Technology Director *Jan 2025 – Present*
- Manage website architecture and functionality for a national student organization, supporting 7,600+ page views over 316 days.

Evercore Technology Partners Remote
Programming Intern *Apr 2023 – Sep 2023*
- Developed full-stack web applications in PHP and Laravel with automated testing across two client projects.