

# Damiane Kapanadze

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## EDUCATION

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### New York University Abu Dhabi

Aug 2023 – May 2027

*BSc, Electrical Engineering*

*New York, NY & Abu Dhabi, UAE*

- **GPA:** 3.95 / 4.00
- **Relevant coursework:** Advanced Digital Logic (FPGA), Advanced Circuits (Cadence), Introduction to Embedded Systems Design, Signals and Systems, Introduction to Machine Learning, Fundamentals of Electronics I, Computer-Aided Design (SolidWorks), Engineering Materials, Linear Algebra, Ordinary Differential Equations, Design and Innovation

## RELEVANT EXPERIENCE & EXTRACURRICULAR ACTIVITY

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### nyuad.space

Sep 2024 – Jun 2025

*Structures and Mechanical Engineer*

*Abu Dhabi, UAE*

- Designed and implemented a redundant Staged Release Mechanism (SRM) for multi-stage model rockets using CAD (Onshape) and structural FEA.
- Produced manufacturing-ready engineering drawings and coordinated fabrication of precision components.
- Applied DFMA principles to improve reliability, manufacturability, and assembly efficiency.
- Launched successfully at the International Rocket Engineering Competition (IREC) in Midland, Texas.

### Georgian State Electrosystem

Jun 2024 – Aug 2024

*Intern, Balancing and Ancillary Services Market Management*

*Tbilisi, Georgia*

- Completed cross-training with the SCADA engineering team and observed control and monitoring workflows for large-scale power infrastructure.
- Studied the design and operation of Georgia's Balancing and Ancillary Services Market, gaining insight into grid integration and market mechanics.

### Firelink

Mar 2022 – Nov 2022

*Lead Engineer*

*Tbilisi, Georgia*

- Led development of an autonomous wildfire detection drone using Python, OpenCV, ArUco markers, and Arduino.
- Designed and integrated an Arduino-controlled autonomous landing pad; earned **2nd Place** in Georgia's national innovation competition.

### FIRST Global Challenge, Georgia

Jun 2021 – Aug 2023

*Lead Engineer & Organizer*

*Tbilisi, Georgia*

- Co-designed and built competition robots with ball storage, launching, and scoring subsystems.
- Mentored new team members, taught robotics fundamentals, and helped organize the national qualifying competition.

## OTHER EXPERIENCE

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### NYU Abu Dhabi

Jan 2024 – May 2025

*Math Tutor, Academic Resource Center*

*Abu Dhabi, UAE*

- Provided one-on-one tutoring in precalculus, calculus, linear algebra, and multivariable calculus across three semesters.
- Used the Socratic method to strengthen students' problem-solving and conceptual understanding.

## PROJECTS

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### Parkinson's Symptom Detection | *Embedded Systems*

Fall 2025

- Detected tremors (3–5 Hz) and dyskinesia (5–7 Hz) using a 6-axis IMU sampled at 52 Hz via timer interrupts.
- Implemented a C++ DSP pipeline with FFT-based spectral analysis on 3-second windows to quantify symptom intensity.
- Designed a TFT touch interface for real-time visualization and alerts; optimized for portable LiPo-powered operation.

**Interactive Book**  | Unity-based educational application for Georgian elementary students

**Rider's Quest**   | VR archery game developed in Unity for Meta Quest 2

## SKILLS

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**Hardware & Design:** CAD (Onshape, SolidWorks), DFMA, Structural FEA, PCB Design, Circuit Simulation (Cadence)

**Programming & Embedded:** C++, Python, MATLAB, C#, Arduino, FPGA (VHDL)

## HOBBIES AND INTERESTS

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**Outdoors:** Hiking, Camping, Slacklining/Highlining, Climbing, Mountaineering, Cycling, Unicycling, Soccer

**Indoors:** Chess, Comedy Films, Baking, Rubik's Cubes, Anime, Origami