Sigmond Kukla

Entrepreneur, Researcher, and Problem-Solver | Electrical and Computer Engineering Student at Clarkson University

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Skills

Programming Proficiency

C, C++, Python, VHDL, Verilog, STM32, CMSIS, Assembly, MATLAB, Excel, React Native, Vue.js, C#, OpenCV, TensorFlow Lite, Docker

Software Proficiency

Altium, KiCad, ARM Keil, AMD Vivado, LTSpice, SiLabs Simplicity, Autodesk Fusion, SOLIDWORKS, Visual Studio, Unity, Blender, Proxmox

Experience

NSF Sensor Development and Implementation Pipeline REU — May - August 2025
Undergraduate Mentor — Clarkson University

- Assist with knowledge transfer to other SDIP REU students and provide resources for research success
- Validate and extend, in Clarkson's chemical engineering BIOsem lab, the capabilities of our portable potentiostat and maternal biosensor system
- Attended the Semiconductor Research Corporation's TECHCON 2025 conference, presenting my work in the undergraduate REU category

Clarkson University Rocketry — September 2024 - Present
Air Brakes Technical Lead — Potsdam, NY

- Built a successful rocket state estimation and altitude targeting control system, resulting in achievement of our 10,000±500 ft goal with an apogee of 10,352 ft at the 2025 International Rocket Engineering Competition
- Involved in Air Brakes PCB design and troubleshooting while also designing our payload data logging PCB hardware and software
- Developed processes to simplify simulation of our rocket throughout development to inform design decisions and validate subsystems

Clarkson University — June 2024 - Present
Undergraduate Research Assistant - Center for Advanced PCB Design and Manufacturing — Potsdam, NY

- Responsible for development of a portable electrochemical sensor using a Texas Instruments LMP91000 potentiostat with an SiLabs EFR32MG12 microcontroller and BLE transmission of experiment data to React Native mobile app
- Won 5th place in Sierra Circuits PCB design competition for creation of an AI-enabled wearable bandage maternal biosensor
- Developed GaitSIT, a VR platform for screening walking gait and assessing balance and motor issues
- Presented AssemBLOCKS, my XR assembly teaching tool with a simulated 6502 microprocessor, at an Associated Colleges of the St. Lawrence Valley *VR in Teaching and Research* Faculty Seminar.

Clarkson University — January 2025 - Present
Teaching Assistant - EE260 Embedded Systems — Potsdam, NY

- Modernized curriculum to target Silicon Labs EFR32xG24 Wireless and ML MCU, writing new lecture presentations and assignments
- Assist students with theoretical and hands-on aspects of the course and delivered multiple approachable and engaging lectures

Clarkson Ignite — August 2024 - Present
Maker Mentor — Potsdam, NY

- Helping students safely transform their ideas into tangible products by leading workshops on equipment in the Ignite Dorf Makerspace
- Responsible for retrofitting pickup lockers for 3D print delivery, building custom hardware and open-source item management software and winning 1st place out of nearly 100 teams at Clarkson's inaugural Project Expo

PicoPlanet Developing — Nov 2017 - Present
Small Business Owner — Pittsburgh, PA
https://picoplanetdev.tk

- Self-taught Virtual Reality game developer in the Oculus Start program with multiple paid games published on the Meta Quest platform

Simcoach Games — June 2023 - July 2023
Summer Apprentice — Pittsburgh, PA
https://www.simcoachapprenticeship.com/

- Worked in small teams on two self-directed transformational games aimed at children with autism/other neurodivergent disorders while helping peers to build game development skills including Unity, C#, Maya, and Blender

Absolute Value Tutoring — May 2023 - August 2024
Curriculum Designer and Teacher — Mt. Lebanon, PA

- Created and taught introductory Python and Arduino programming curriculum for advanced elementary and middle school students

Education

Clarkson University — May 2028
Electrical and Computer Engineering — Bachelor of Science
4.0 GPA

Ignite Presidential Fellow and rising Junior in ECE coursework

Mount Lebanon High School — June 2024
4.0 GPA / 5.2 weighted

10 AP classes including one self-studied, and 3 Independent Study project courses in senior year after finishing all available curriculum