



Henry MACKAY

Date of birth: Jul. 3rd 2001

Nationality: Austrian, American

CONTACT

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LANGUAGES

English Native, A1 Spanish

SKILLS AND INTERESTS

Circuit Design, OOP, Layout Design, Soldering, Device Testing & Characterization

International Drivers License Valid June 2024 - June 2025

EDUCATION AND TRAINING

10/09/2020 – Expected May 2024 Graduation

Bachelors Degree George Washington University

Field of study Electrical Engineering

WORK EXPERIENCE

01/04/2022 – CURRENT Washington DC

Undergraduate Researcher Adaptive Microsystems Lab

- Assist in the design of analog neural synapses for the purpose of large scale, low power, neuromorphic computing.
- Collaborate with the USMA on an Intrusion detection system with an integrated circuit powered by a decision tree framework.
- Write Python and TCL for automated generation of device layout using Skywater-130 PDK.
- Manage Docker-based design environments and write technical documentation used across multiple universities.

Department Electrical Engineering Department | **Website** <https://adam.seas.gwu.edu/>

01/10/2023 – CURRENT Washington DC

Automated Plant Growing Environment Senior Project Lead

- Providing a low cost means of growing sustainable foods at home with a Network-Enabled ESP-32 Microcontroller used to control humidity, temperature and CO₂ levels inside custom built growing container.
 - Input data sent from I2C sensors and Camera and sent to EC2 instance for decision making.
 - Interactive web user interface using with a Node.js REST API backend.

01/09/2022 – 12/20/2023 Washington DC

Capstone Advisor GWU Innovation Center

- Provided technical support for GWU capstone projects involving electronics with an emphasis on Raspberry Pi and Arduino.
- Taught accessible circuit building and signal processing workshops designed around sound and music.

01/09/2020 – 01/02/2022 Boulder, Colorado

Remote Design Consultant Eco Systems

- Built a climate control system using Z-Wave protocol and Microcontrollers. Designed infrastructure for a smart and sustainable greenhouse.

01/05/2019 – 01/09/2019 Baltimore, Maryland

Cybersecurity Intern Point3 Security

- Built components of a "smart city" for use in simulating real life cyber attacks.
- Modified a traffic light to give it Internet connectivity using Raspberry Pi and Python API with authentication.
- Developed an automated Linux-based virtual machine training environment for the purpose of training cyber operatives and evaluating vulnerability detection software.
 - Robust Boolean shell expressions used to evaluate VMs with programmed vulnerabilities and gauge vulnerability removal and security policy according to NIST SP 800-123 standards.