




## HENRY MACKAY

**Date of birth:** July 2001

**Nationality:** Austrian, American

**(Full E.U. Work Authorization)**

## CONTACT

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## LANGUAGES

Native English

B1 Spanish

A1 German

## SKILLS AND INTERESTS

Circuit Design, OOP, Layout Design, Soldering, Device Testing & Characterization, Linux, IoT and Embedded Systems

International Drivers License Valid  
June 2024 - June 2025

## WORK EXPERIENCE

**04/2022 – 05/2024** Washington DC

### Undergraduate Researcher Adaptive Microsystems Lab

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

**Website:** <https://adam.seas.gwu.edu>

**10/2023 – 06/2024** Washington DC

### Bachelor's Thesis Mykoprisma

- Developed an automated plant growing environment for sustainable low cost food production.
- Wrote decision making algorithm based on sensor data to enable full environmental control of temperature, humidity, and CO2.
- Designed PCB to integrate network-Enabled ESP-32, sensors, actuators, and camera.
- Built interactive web user interface using a Node.js REST API backend.

**Website:** <https://mykoprisma.com>

**09/2022 – 12/2023** 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.

**09/2020 – 02/2021** 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.

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

### Cybersecurity Intern Point3 Security

- Built components of a "smart city" for use in simulating 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.

## EDUCATION AND TRAINING

**09/2020 – 05/2024**

### Bachelors Degree George Washington University

**Field of study** Electrical Engineering (3.3 GPA)