Christopher Manna

Professional Experience

Full Stack Geospatial Data Engineer
dClimate | Remote   Aug 2025 - Present

Environmental & Computer Engineer
Two Bears Environmental Consulting | Remote   June 2023 – Aug 2025
- Developed Python workflows using xarray and xclim to generate climate indices from large-scale environmental datasets, supporting hazard prediction and consulting for remote Alaskan communities.
- Integrated projected climate and elevation data to run HEC-RAS flood simulations for community-scale risk assessment.
- Designed Machine Learning Models in Python to create future hazard susceptibility maps based on historical and projected climate and geospatial data.
- Researched modular hydrokinetic turbine systems for off-grid energy in remote communities, focusing on rotor design trade-offs, tidal flow feasibility, and manufacturability.

Electronics Engineering Intern
Northrop Grumman | Redondo Beach, CA   June 2022 – July 2022
- Created hierarchal designs to existing VHDL files for the FPGA of a Satellite Demodulator.
- Developed Python scripts to generate binary config files, accelerating Satellite Demodulator Testing.

Electrical Engineering Intern
MVE Biological Solutions | Ball Ground, Ga   Sep. 2020 – Dec. 2020 | June 2021 – Aug. 2021
- Developed Firmware for microcontrollers (PIC and STM) used in embedded cryogenic control systems.
- Developed a C# desktop application to decode and export binary logs from TEC3000 controllers for end users.
- Automated testing and validation of embedded hardware/software on Raspberry Pi using Python scripts.
- Created Test Protocol and Test Reports and performed various product validation testing.

Relevant Projects

Bird Box – Smart Bird Feeder
Built a solar-powered smart bird feeder using ATmega328p and ESP32-CAM with low-power firmware, sensor-actuator control, and live-streaming via WiFi webserver.

TrojanCare – Health Wristband
Developed a low-power wearable on xDot using MAX30102 and MPU6050 with LoRaWAN; implemented I^2C communication, interrupt-driven fall detection, vitals processing, and cloud monitoring via ThingsBoard.

Education

University Of Southern California
M.S in Computer Engineering | GPA 3.82   Aug 2022—May 2024
B.S in Electrical and Computer Engineering | GPA 3.74   Aug 2019—Dec 2023

Skills
Python, C/C++, Verilog, C#, MATLAB, HTML/CSS
ATmega, STM32, PIC, Raspberry Pi, Arduino, Nexys 4 FPGA
I2C, SPI, UART, TCP/UDP, LoRa, WiFi
Git, Linux, Visual Studio, AWS, QGIS, Soldering
FAA Part 107 Certified Remote Pilot