

William Brown

Email: williamlandisbrown@gmail.com Website: www.astrotino.com Portfolio: www.astrotino.com/portfolio

Engineering Experience

Consonant Systems LLC, Philadelphia, PA (remote)

April 2023 - Present

R&D Engineering Consultant

- Designed and optimized a fluorescence-based system using off the shelf evaluation boards, custom components, and custom code. Collaborated with the chemistry team to define device specifications and assess system performance. Developed and executed test protocols to evaluate the performance of the diagnostic system.
- Designed and implemented device interface mobile application. Worked with a design consultant to improve the UI quality and accessibility.
- Developed a CFD model in OpenFOAM to support design work for microgravity applications.
- Participated as an Entrepreneurial Lead in the I-CORPs Regional Program at Princeton University
- Presented in the Keller Innovation Forum Pitch competition on behalf of a client company, placed 3rd winning a \$10,000 prize to further aid in R&D.
- Manufactured over 1,000 laminated microfluidic devices for use in exosome-based liquid biopsy research.
- Prototyped a data acquisition and control system for a microfluidics client using Python, Arduino, and ESP-32 dev boards.

Chip Diagnostics, Philadelphia, PA

September 2021 - April 2023

Engineer

- Maintained and tested a legacy customer-facing GUI application written in the Python Kivy framework.
- Worked with customers in both internal and external labs to provide customer support and improve the workflow of our automated bench-top device. For example, adding a new section to the app where users could change the current protocol and a summary screen listing all steps of the selected protocol.
- Prototyped the company's next generation benchtop device using Raspberry Pi and Arduino modules for vacuum pump control.
- Brought production in house from an external vendor including the creation of an inventory management solution from the ground up. Re-designs and process improvements on the flagship product saved \$5k per device. Roughly 50% of the original advertised sale price.
- Developed and improved an in house production line for laminated microfluidic medical devices. Including: design work, continual process improvements, materials planning, QA, manual assembly, and more as needed.

Starry Inc, Boston, MA

Mechanical Design Co-Op, Mechanical Engineer 1

January - August 2018, June 2019 - August 2021

- Wrote and tested microcontroller software communicating over SPI using Python on a Raspberry Pi to unblock a mission critical project
- Designed and managed the system level product tester for the company's newest and highest volume radio. Work included: system specification, RF schematic reviews, component design in SOLIDWORKS, coordinating and ordering from vendors, manual part re-works in house, and final assembly
- Collaborated with RF engineers and systems engineers to help with various Python programming tasks.
- Worked as a thermal analyst across multiple products. Ran thermal simulations using a combination Flotherm XT and Excel spreadsheets to validate and iterate on thermal designs quickly. One such project saved \$330,000 dollars per one thousand radios built.

Proveris Scientific, Marlborough, MA

Mechanical Engineering Co-Op

January – June 2017

- Wrote and tested Python scripts to control motors, sensors, solenoids, and other peripherals for Kinaero® inhaler testing platform

Academic Experience

Northeastern University (2019), Boston, MA

Bachelor of Science in Mechanical Engineering with a Minor in Computer Science

NSF I-Corp Regional Participant 2023, Keller Innovation Forum Pitch competition (Princeton University)

Relevant Skills

Engineering: SOLIDWORKS (CSWA), Flotherm XT, OpenFOAM, KiCAD, Visual Studio, Microsoft Office Suite

Programming: Python, Flutter, Kivy (Python), C++ (Arduino), Java, Git, Github, and Linux

Hands on: CNC, 3D printing, knife plotter, soldering, PCB design, stepper motors, ESP-32

Background and Interests

- Personal projects that explored ROS2 using the Nvidia Jetson Nano platform and a 3D printed robotic arm
- Eagle Scout (2/4/2014): Designed and constructed risers for a local middle school for my Eagle project