Michał Swoboda

Education

Drexel University — Philadelphia, PA
Master of Science, Biomedical Engineering — September 2012 - June 2017

Experience

RightAir — Philadelphia, PA
Chief Technical Officer — October 2016 - Present

- Developed clinical prototypes according to FDA's CGMP
- Designed pneumatic systems and control algorithms for biphasic cuirass ventilators
- Tested clinical prototypes on COPD patients
- Created and maintained DHF for regulatory review

NeuroMechanix — Philadelphia, PA
Independent Consultant — May 2016 - Present

- Gathered design requirements from customer
- Designed and developed embedded devices according to customer needs
- Validated device functionality & operational characteristic

Drexel University — Philadelphia, PA
Translational Research Engineer — March - October 2016

- Interviewed surgeons to establish clinical needs and problems
- Observed surgical procedures & participated in patient rounds
- Developed engineering solutions to clinical problems

Moss Rehab — Elkins Park, PA
Clinical Engineer — March - October 2015

- Operated and maintained medical equipment
- Designed devices for clinical evaluation of patients
- Assisted physicians during medical procedures

NeuroDx Development — Bensalem, PA
R&D Assistant Engineer — April - September 2014

- Designed & constructed automated testing systems
- Manufactured bio-sensors for clinical use
- Documented and analyzed explanted biomedical devices

Master Thesis: Implantable fNIR Platform for Animal Stroke Models — September 2016 - June 2017

The designed device is an fNIR neuroimaging implant that is intended to measure the hemodynamic activity in small animal, stroke models. The device provides a unique platform to study stroke mechanisms in-vivo before, after, and during cerebrovascular events. I designed and developed the hardware and firmware of the device.

Skills

Software: MATLAB, LabVIEW, C/C++, Python, Microcontroller Programming (Espressif, Cypress PSoC, Atmel AVR), Visual Studio Code, Fusion 360, Autodesk Inventor
Hardware: Traditional and Multi-layer SMT prototyping techniques, PCB Design and Fabrication, Electrical Circuit Analysis, CNC Manufacturing, Rapid Prototyping using 3D Printing and Traditional Machining, Data Acquisition, Experiment Automation

Honors and Awards

NextFab RAPID Accelerator Award - 2018
NSF Innovation Corps Award- 2018
Ben Franklin Partnership for Rapid Prototyping and Fabrication Grant - 2017
Penn Health-Tech Medical Technology Grant - 2017
Medical Device Accelerator Grant - 2017
Second Grand Prize Wharton Startup Challenge - 2017
Dean's List – 2012 - 2017