Alexander Camilo

Electrical Engineer
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PERSONAL STATEMENT

I am a passionate and driven engineer. Ever since my graduation I've been involved in an Educational Robotics Startup, Founded a Makerspace, and Worked with PHD Students on cutting edge medical Robots. My core skills lie in Schematic Capture and PCB Layout. Additionally, I've acquired many ancillary skills that turn me into an effective troubleshooter and rapid prototyper.

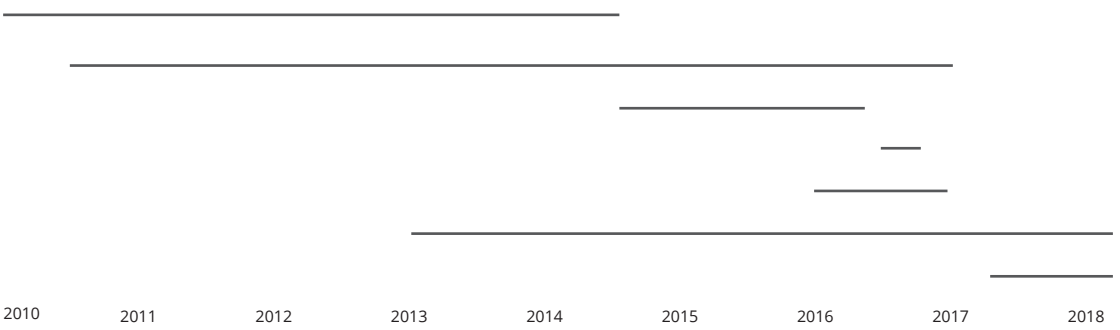
EDUCATION

From September 2005 to September 2010.

- B.A Electrical and Computer Engineering.
  Worcester Polytechnic Institute. Worcester.

WORK EXPERIENCE

1. Neuron Robotics LLC
   Co-Founder 7/09 to 6/14
2. WPI AIM Lab
   Contract Researcher 7/10 to
3. Neuron Robotics CoOp
   Co-Founder 7/14 to 3/16
4. Quinsigamond Community College
   FabLab Manager 7/16 to 9/16
5. Imagination Unbound
   Part Time Teacher 1/16 to 1/17
6. Technocopia Makerspace
   Founding Member 1/13 to Current
7. Scientific Systems Co Inc
   Contract Engineer 3/17 to Current



1 *Neuron Robotics LLC, Co-Founder*

- Founded a Robotics startup during my senior year with two classmates.
- Was responsible for the design,prototyping/debugging, testing jig, and a 500 unit production run of our company's Educational Robotics Controller.
- Did Electrical engineering contract work including Development Boards for the WPI RBE department

5 *Imagination Unbound, Part time Teacher.*

- Developed my own S.T.E.M curriculum modules for after-school robotics classes. Curriculum included Electronics,Programming, and robotics
- Ran multiple weekly after-school classes using this curriculum.

2 *WPI AIM lab, Contract Research/Engineer.*

- Worked in a collaborative environment at the Automation and International Medicine Lab with a PHD student on a low noise, closed loop, piezoelectric controller for an MRI Guided Surgery robot that has been used in successful clinical trials.
- Designed, built, and programmed version two and three of the MRI Compatible Surgical Platform Control Box, allowing for coordinated motion and faster control loops
- Handled Schematic Capture, PCB layout, SMT Rework assembly of prototypes and some production units.
- Acted as Technical Student Advisor for lab work; supervised laboratory assistants. Helped multiple grad/phd students finish their experiments and graduate.

3 *Neuron Robotics CoOp*

- Reorganized start-up in order to market a matured version of embedded HW and SDK.
- Designed and automated product testing system.
- Led the push to finish development and get final product on the shelves of Micro Center.
- Did Electrical engineering contract work designing PCBs and prototypes for industrial and consumer products.

6 *Technocopia Makerspace, Founder*

- Founded a local makerspace in Worcester that now has 100 members
- Have been a persistent volunteer since 2013 and helped with a crowd-funding campaign that brought in 20,000$

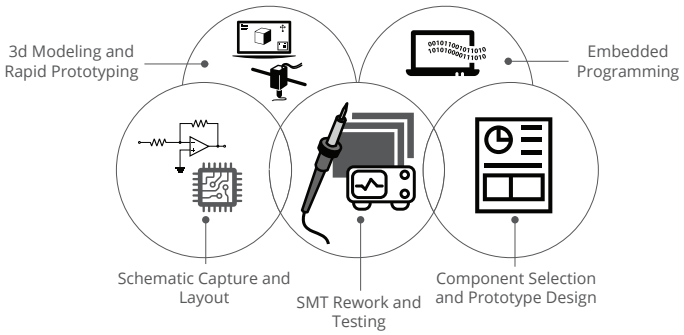
4 *Quinsigamond Community College*

- Installed and maintained QCC's FABLAB.
- Taught Arduino Robotics Workshop courses to students aged 9-12.

7 *Scientific Systems Co Inc.*

- Wrote batch scripts to Process Digital Elevation Models.
- Helped Prepared Experiments for Helicopter Flight Testing.
- Designed and Built a Flight Worthy Power Distribution box for an upcoming experiment.
- Built a Transient Suppression and Filtering module (PCB) for the above mentioned Power Distribution Box.
- Helped test Simulation Software using OSGEarth and GDAL.

MY SKILLS



SMT Rework and Testing

- Can hand populate a Surface mount PCB using parts as small as 0.4mm pitch chips and 0402 components.
- Can Modify prototypes by cutting traces, soldering in "bodge wires", and adding components.
- Can coordinate with manufacturers and manage a small production run.
- Can bring up a new design and troubleshoot it.
- Proficient with Scopes, Logic Analyzers, Bench-top Power Supplies and Multi-meters.

Schematic Capture and Layout

- Know Eagle and Altium
- Can Easily pick up a new software package

3D Modeling and Rapid Prototyping

- Familiar with Fusion360 and Solidworks
- Designing for and printing parts on
  - FDM and SLA 3D Printers
  - Laser Cutters and CNC Mills

Component selection and Prototype Design

- Can distill a set of requirements into a design for a prototype.
- Have a Good understanding of digital and analog fundamentals.

Embedded Programming

- Familiar with kernel modules and the Linux kernel.
- Proficient in Embedded C and C++.
- Familiar with Java, C++, C#, and Python.
- Familiar with embedded networking, wifi and IOT.

MY CO-PUBLICATIONS

Book Chapters

1. Cole GA, Harrington K, Su H, Camilo A, Pilitsis JG, Fischer GS, Closed-Loop Actuated Surgical System Utilizing In-Situ Real-Time MRI Guidance, Springer Tracts in Advanced Robotics - Experimental Robotics, eds. Khatib O, Kumar V, Sukhatme G, Springer-Verlag, Vol. 79, pp 785-798, 2014.

Journal Publications

1. Su H, Shang W, Cole GA, Li G, Harrington K, Camilo A, Tokuda J, Tempany CM, Hata N, Fischer GS, Piezoelectrically Actuated Robotic System for MRI-Guided Prostate Percutaneous Therapy, IEEE/ASME Transactions on Mechatronics, Vol 20, No 4, Aug 2015. IEEE, PDF
2. Li G, Su H, Cole GA, Shang W, Harrington K, Camilo A, Pilitsis JG, Fischer GS, Robotic System for MRI-Guided Stereotactic Neurosurgery, IEEE Transactions on Biomedical Engineering, Vol 64, No 4, pp 1088-1088, April 2015. IEEE, PDF

Conference Proceedings

1. Su H, Shang W, Harrington K, Camilo A, Cole GA, Tokuda J, Hata N, Tempany CM, Fischer GS, A Networked Modular Hardware and Software System for MRI-guided Robotic Prostate Interventions, SPIE Medical Imaging, San Diego, USA, Feb. 2012. SPIE, PDF
2. Su H, Camilo A, Cole GA, Tempany CM, Hata N, Fischer GS, High-Field MRI-Compatible Needle Placement Robot for Prostate Interventions, Proceedings of MMVR18 (Medicine Meets Virtual Reality), Newport Beach, California, USA, February, 2011, PDF
3. Cole G, Harrington K, Su H, Camilo A, Pilitsis J, Fischer GS, Closed-Loop Actuated Surgical System Utilizing Real-Time In-Situ MRI Guidance, 12th International Symposium on Experimental Robotics - ISER 2010, New Delhi, India, December 2010. ISER BibTex EndNote