

Michael I. Gosselin

CONTACT INFORMATION 3540 Middlefield Road Mobile: +1-650-276-8473
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SKILLS Mechanical Hardware Skills:

- SolidWorks, exact-constraint design, DFA/DFM, estimation, focused & comprehensive physical prototyping (testing techniques, hand-construction)

Electronic Hardware Skills:

- Multilayer PCB design, fabrication & assembly (through hole & surface mount); Circuit prototyping (point-to-point, breadboard, deadbug, & others); PCB re-work; microcontrollers [STM32F4, ATmega32u4]; LTSpice; KiCAD; Test & Measurement equipment (i.e. oscilloscope); Mixed-signal circuit design; Analog filters & signal conditioning

Software/Firmware Skills:

- Git, Linux, Python/Numpy, C (on embedded devices), MATLAB, Simulink, L^AT_EX

PROFESSIONAL EXPERIENCE **Transcriptic, Inc.**, Menlo Park, CA

Hardware Team **August 2014 to Present**

- Collaborated with a team of six engineers to design and build three 5m x 2m x 1m Cartesian robots from raw components for automatic transport & handling of containers in biological experiments (all ME, EE, Firmware in-house).
- Held a role in the team as the responsible engineer for EE. Generated documentation for communicating EE-design information with team members (schematics, specification tables, assembly documentation).
- Interfaced with MEs on key design intersections: PCBA and connector positions & clearances, cable routing, motor selection.
- Special biological environmental sensor-device sub-project: collaborated with a Transcriptic firmware engineer to elicit needs, develop requirements, prototype circuits & firmware (parallel development), design final PCBA, design & execute tests.

RELEVANT PROJECTS **DAC Project** Menlo Park, CA

Independent Project: "mStereo" **January 2013 - Present**

- Conceptualized, prototyped and tested a high-performance stereo audio DAC for use with personal computers. (Match industry best-in-class performance, undercut cost).
- Used LTSpice model and simulations to isolate the analog filter and output buffer subsystem: used to predict performance characteristics and make component selections.
- Used physical prototyping (solderless breadboards and SMD breakout-boards) to create a comprehensive physical prototype (full-system-integration validation).
- Used Solidworks to design an aluminum enclosure for electrical safety and to support panel connectors and controls. Fabrication (machining, press-in fasteners) outsourced.
- Created schematic, laid out 4-layer circuit board with surface mount components, and prepared manufacturing files (BOM, pick-and-place lists, Gerber files, stackup list).

EDUCATION **University of Pennsylvania**, Philadelphia, PA, USA

Master of Science in Engineering, Mechanical Engineering and Applied Mechanics
Specialization in Mechatronics **December 2013**

University of British Columbia, Vancouver, BC, Canada

Bachelor of Applied Science, Mechanical Engineering
Engineering Co-op Program **May 2011**

CITIZENSHIP Canadian