Andrew "Drew" F. Bell

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EDUCATION & RESEARCH

Stanford University
Expected: June 2018

- M.S. Mechanical Engineering — GPA: 3.71/4.0
  - Depth: Smart Product Design - ME218 A, B, C, and D mechatronics sequence
  - Breadth: Product Realization, plus additional coursework in Computer Science

Research Assistant – Biomimetics and Dexterous Manipulation Lab — Jan. 2017–Current

- Designed and built a 150mm brushless micro quadrotor equipped with a controllable adhesive mechanism used for perching and climbing on vertical outdoor surfaces

Graduate Course Assistant – ME218 ABC: Smart Product Design — Sept. 2017–June 2018

- Helping students solve and debug mechatronics lab assignments involving GPIO, interrupts, PWM, signal conditioning, motor drive, and communication protocols on ARM Cortex-M4F and PIC 8-bit microcontrollers

Graduate Course Assistant – ME112: Mechanical Systems Design — Sept. 2016–March 2017

- Prepared assignments and lab equipment for an undergraduate course on mechanisms, motors, and mechanical design

University of Illinois, Urbana-Champaign
GPA: 3.96/4.0

- B.S. Mechanical Engineering, Highest Honors, May 2014

Hoeft Technology and Management Program (T&M) — Aug. 2011–May 2013

- Highly-selective 22-hour minor combining engineering and business to develop globally-focused leaders in tech fields

John Rogers Group – Undergraduate Research Assistant — Jan. 2014–May 2014

- Researched forehead-mounted flexible core body temperature sensors under bioelectronics pioneer Prof. John A. Rogers.

WORK EXPERIENCE

Garmin International
Mechanical Engineer, Consumer Fitness - Olathe, KS — Nov. 2014–July 2016

Designed consumer electronic wearable devices with an emphasis on ultra-competitive running and triathlon markets. Sourced parts. Assembled and tested prototypes. Conducted engineering R&D and field testing on future features and technologies.

Key Contributions:

- Designed the Forerunner 935 - Garmin's flagship triathlon watch - as one of two mechanical engineers on the core product team. Produced SolidWorks models and engineering drawings for the injection-molded plastic main housing, 2 flexible PCBs, a rigid optical heart rate sensor PCB, and other plastic and sheet metal parts.
- Led development of a "swim tester" for testing the sealing interfaces of aquatic wearables. Specified, designed, sourced, and built the machine with 80/20 framing, 13 custom machined parts, VFD-controlled 2HP motor, and PLd-rated safety system.

Tesla Motors
Battery Engineering Intern - Palo Alto, CA — *Sept. 2013–Dec. 2013*

- Tested Model S battery pack parts, including protective vent covers, pressure release valves, and high-voltage battery spines
- Established a key battery pack venting specification by developing a test procedure, apparatus, and DAQ system, then synthesizing the resulting data with vehicle performance requirements

Microsoft
New Product Introduction Intern - Redmond, WA — *May 2013–Aug. 2013*

- Facilitated communication of project decisions, risks, and roadblocks between director and management-level leadership of 10 functional groups to guide development of the Surface Hub product line
- Supported launch activities on-site in Suzhou, China and Tel Aviv, Israel

Mechanical Engineering Intern - Redmond, WA — *May 2012–Aug. 2012*

- Developed a report evaluating a design change proposal for the Xbox Kinect gear train impacting 15M units. Findings enabled management to make a No-Go decision due to limited cost savings and substantial risk to holiday shipments.
- Performed due diligence at Foxconn and other tier 1 manufacturing partners in Hong Kong and Shenzhen, China

InKnowVision Alaska
Lead Engineer - Anchorage, AK / Champaign, IL — *Nov. 2011–May 2014*

- Engineered an aerating device for boxed wine packaging as an equity-holding member of company leadership
- Produced four iterations of 3D printed prototypes and related intellectual property for a 2012 utility patent application

Robert Bosch LLC

Manufacturing Coordination Intern - Fayetteville, NC *May 2011–Aug. 2011*

- Implemented Bosch lean manufacturing methodologies on production lines. Developed 15 metrics to guide line balancing, scrap reduction, and value stream design. Responded to root causes of an uncovered $250,000/year scrap problem.

Napkin Labs, Inc.

Web Community Manager - Boulder, CO *June 2010–Aug. 2010*

- Led a wide array of customer-facing projects in web community development, marketing, user acquisition, customer satisfaction, and website design for a product design crowdsourcing startup

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TECHNICAL SKILLS

Software

- Professional – 500+ Hours of SolidWorks, MS Office: Word, Excel, PowerPoint
- Proficient – Embedded C, C++, assembly language, git, Altium Designer, MATLAB
- Intermediate – Python, Altium PCB design

Mechanical and Design

- Exploration and detailed CAD design, rapid and iterative prototyping, FEA, GD&T, industrial safety systems
- Getting hands dirty with shop fabrication, mill, lathe, TIG welding, 3D printers, lasercutters
- Basic needfinding, plus effective communication across customers, stakeholders, vendors, CMs, and team members

Electrical and Embedded

- Mechatronics design, bare-metal programming, soldering, wiring, basic analog and digital circuit design, PCB design, board bring-up, debugging with oscilloscopes and logic analyzers, microcontroller peripheral bring-up, system integration
- Project experience with communication protocols including CAN, XBee, SPI, UART
- Toolchains: Keil, CCS

PERSONAL

- 2015 Ironman 70.3 World Championship Qualifier: competed in Zell am See, Austria, placing 34th globally in age division
- Engineer in Training (EIT) – State of Missouri, January 2016
- Eagle Scout – Boy Scout Troop 401, August 2009