

# Eduardo García

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**Education** **University of Pennsylvania, School of Engineering and Applied Science, Philadelphia, PA**  
*Master of Science in Engineering: Robotics* - GPA: 3.77/4.00 May 2015  
*Field of Study: Adv. Mechatronics, Robotics, Machine Learning, Computer Vision, Design for Manufacturability*  
**Universidad de los Andes, Bogotá, Colombia** Mar 2012  
*Bachelor of Science in Electronic Engineering* - Major GPA: 4.11/5 - Rank 9<sup>th</sup> out of 28 students  
*Bachelor of Science in Mechanical Engineering* - Major GPA: 4.09/5 - Rank 8<sup>th</sup> out of 50 students  
*Field of Study: Digital Systems Design, Analog/Digital Electronics, Dynamics of Machinery, Mechanical Design*

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**Leadership Roles & Projects**

- System Architect:** Lead and designed the system architecture for three ongoing embedded systems projects at Bresslergroup: an IoT home appliance and two medical-oriented products. Currently four developers (myself included) are developing code for the systems designed.
- Robotic Opera:** Lead a team of engineers and designers on the development of an entertainment robot with complex dynamics. The robot played a part on an opera play of the Myth of Orpheus featuring singers from the Opera of Philadelphia.
- Robockey:** Lead the electronics design of a team of autonomous mobile robots that played 'ice-hockey' against other teams. Created an ingenious "hot-swap" circuit that allow robots to join to create a more powerful robot.

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**Work Experience** **Electrical Engineer** June 2015 – Present  
**Bresslergroup**, Philadelphia, PA, USA

- Architected and designed the electronics for a battery powered medical device circuit used to sanitize bed areas in hospitals to prevent the spread of viruses. Developed code and algorithms to drive the sanitation process in ways that maximize effectiveness while minimizing battery use.
- Designed the electronics and software architecture for a prototype medical device for use by surgeons on heart-related surgeries. Developed motor control code for device proof-of-concept.
- Designed the system architecture for an IoT home appliance (Wi-Fi connected). Developed code to abstract the hardware layer, allowing other developers to easily add features to the system.
- Debugged complex real-time system bugs on multiple projects, tracking down their root cause to either software bugs or hardware bugs. Performed hardware bring-up on new prototypes and performed hardware fixes to boards that presented issues, allowing development to continue while boards were fixed and re-spun.

**Research Assistant** Oct 2014 – June 2015  
**Modular Robotics Lab (ModLab), University of Pennsylvania**, Philadelphia, PA, USA

- Designed test equipment that facilitates the debugging and verification of complex robot hardware (both electronics and mechanical components), allowing the rapid manufacturing of current and future robots.
- Debugged software and hardware issues on modular robots, finding the root cause for elusive system bugs.

**Embedded Engineer (Internship)** May 2014 – Aug 2014  
**Lutron Electronics, Inc.** Coopersburg, PA, USA

- Designed and developed, within a multi-disciplinary team, the addition of a new communication protocol standard into an existing Lutron product, allowing its expansion into a new market segment.
- Debugged complex real-time software and hardware to find and correct defects in a Lutron product, improving customer experience.

**Electronic Design Engineer** Nov 2012 – Aug 2013  
**CIEL Ingeniería**, Bogotá, Colombia

- Designed and developed an electronic board which consolidated the functionality of three different products of the company into one single board, reducing the cost of manufacturing and simplifying assembly.
- Improved an existing project by implementing a new programming structure that allowed the introduction of new features within the same project timeframe and with the same costs.

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**Technical Skills** **Skills:** Embedded Systems Development, Hands-on debugging, Electronics, Mechatronics, System Architecture  
**Programming & Software:** C, C++, Assembly, Altium, Matlab, Labview, LtSpice  
**MCU Architecture Experience:** Cortex M0+/M3/M4 (Atmel, ST, Cypress PSOC, NXP, Freescale, TI)