

# Biomedical Billy

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## EDUCATION

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University of Southern California, *Los Angeles, CA* **May 2017**  
**B.S. Biomedical Engineering**, emphasis in Biochemical Engineering, GPA: 3.78

## SKILLS

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- MATLAB, LabVIEW, AutoCAD Fusion 360, Solidworks, ITK-SNAP, MRIcron, PHP, MySQLi, JavaScript jQuery, C/C++

## PROJECTS

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**Chair Project (Senior Design Project)** **Fall 2016**

- Constructed working prototype of a chair that detects cerebral palsy patients' weight-shifts to control a computer cursor.
- Generated a LabVIEW program to collect and analyze voltage data from load cells with a MyRIO device in the seat to override the computer screen's cursor movement and clicking selection functions.
- Conducted validation studies and generated a technical analysis report as the primary author.

**Smart Shoe Project** **Fall 2016**

- Lead cross-functional team of six members to generate a feasibility report of a smart shoe insole with sensors.
- Analyzed prior art and predicate devices to determine intellectual property strategy and regulatory strategy.
- Contributed to the technology design, selection of materials and manufacturing processes, and risk management analysis.
- Conducted market analysis and developed a thorough business plan to determine feasibility.

**Eye-Glass Project** **Spring 2016**

- Designed and prototyped adjustable, modular eye-glasses frame in 36 hours with a team of five members.
- Utilized 3D printing and laser cutting to iterate non-uniform device pieces from CAD designs.

## EXPERIENCE

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**Summer Intern, ABC Lab** **Summer 2016 - Present**

- Developed Matlab program to automatically quantify symmetry of ventricles in stroke patients' brain MRI images.
- Evaluated lesion tracking and quantification process in eFolder System for Multiple Sclerosis patients using ITK SNAP.
- Presented findings at SPIE Medical Imaging Conference in Orlando, February 2017

**Electrical Engineering Lab Assistant, USC Dept** **Spring 2016 - Present**

- Oversee EE classroom lab by fixing equipment, maintaining inventory, and helping students with design projects.

**Research Assistant, USC Dept Lab** **Fall 2015 - Spring 2016**

- Studied the differentiation of the hair cells and supporting cells within the embryonic cochlea by designing primers that enhance specific regions of the genome to characterize the effect during sensory development.
- Independently analyzed results, identified necessary modifications to procedures and presented in weekly lab meetings.

**Sterile Processing Intern, DEF Medical Center** **Summer 2015**

- Identified errors with stock equipment and communicated with technicians to find solutions.
- Collected reusable equipment from the operating room and sorted based on sterilization method.
- Learned to operate radiation therapy software.

## LEADERSHIP

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**Vice President, USC Society of Women Engineers** **2016 - 2017**

- Oversaw the fruition of over 30 events and programs each semester ranging from professional development, social bonding to mentorship and community outreach.
- Ensured cohesion between committees with a focus on critical goals.
- Successfully introduced SWE's first High School Conference where 100 high school girls participated in professional and personal development workshops on campus.

**Co-Chair, Viterbi Honor Council** **Spring 2015 - Spring 2016**

- Collaborated with a group of seven students, tasked by the Dean, to rewrite the Viterbi School of Engineering's academic honor code and present it to faculty members and the Dean.
- Coordinated plan to market and ensure integration of the honor code.

## INVOLVEMENT

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**USC MEDesign Medical Device Design Team: Design Lead** **Spring 2016 - Present**

**Trojan Health Volunteer** – California Hospital Medical Center: Emergency Department Liaison. **Fall 2015 - Present**

**Health 4 Life:** Planned and taught weekly lessons on health topics to elementary school students. **Spring 2015**

## HONORS/AWARDS

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USC Presidential Scholarship Award  
Christenson Family Scholarship

USC Bartlett Scholarship  
USC Provost's Research Fellowship

Viterbi Dean's List