**Luke Lombardi**

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**EDUCATION**

**Binghamton University, State University of New York** Overall GPA: 3.5/4.0

Bachelor of Science in Biomedical Engineering, May 2016 Major GPA: 3.7/4.0

* Honors: Watson School of Engineering Dean’s List (Spring 2014 – Spring 2016)
* Concentration: Medical Devices and Instrumentation, Computational Analysis
* Relevant Courses: Biological Networks, Circuits and Signals, Data Acquisition and Analysis, Complexity in Biological Systems, Programming Concepts and Applications, Adaptive Systems

**SKILLS**

**Software:** Mathematica, MATLAB, Solidworks, Creo, MS Office, LABVIEW, AutoCAD

**Programming languages:** Python, R, JAVA, C, C++, SQL, Perl

**Lab:** Confocal microscopy, mammalian tissue culture, transcardial perfusion

**DESIGN/RESEARCH EXPERIENCE**

**Engineering Medical Innovation Global Competition: Tremor-preventing Glove** **October 2015 – Present** University of Hong Kong & Binghamton University

* Led and advised a team of 8 members from Binghamton university selected to participate in a global engineering competition in Hong Kong, China
* Engineering a glove that reduces resting tremors experienced by Parkinson’s patients by analyzing real time data recorded by an accelerometer and outputting opposing force to stabilize the hand using solenoids

**Senior Design Capstone: Hip Fracture Prevention Device September 2015 – May 2016**

Binghamton University, New York

* Designed a wearable device that redistributes impact forces resulting from a fall to protect patients who are at high risk of hip fracture
* Established design inputs and performance criteria through client interviews, research of predicate devices, and clinical data
* Developed several design concepts and evaluated each using established performance criteria
* Created CAD models and drawings to manufacture prototypes and test samples

**Interdisciplinary Studio for Learning and Design (ISLAND) September 2015 – May 2016**

Binghamton University, New York

* Helped developed a studio for learning and design for Binghamton engineering students
* Designed and hosted workshops to teach MATLAB, AutoCAD, and other engineering software to students
* Held offices hours for students in Biomedical Engineering 203: Numerical Methods

**Junior Engineering Design: Arduino Mouse Emulator** **January – May 2015**

Binghamton University

* Delegated tasks among a team of 6 members to keep everyone up to date and on track
* Constructed a hands-free mouse for handicapped patients by analyzing head movements using an Arduino
* Established a sensitivity threshold to obtain peak performance for the device

**Biological Networks Project September – December 2013**

Binghamton University, New York

* Designed network analysis software in Python to identify correlations between politicians voting records and campaign contributors
* Analyzed output data to establish whether political alignments or campaign contributions had a larger impact on voting habits

**Complex Adaptive Systems Design Project January – May 2013**

Binghamton University, New York

* Created a genetic algorithm to automate placement of electronic components on a 3d printable circuit board
* Implemented a multi class machine learning library in Python with several training mechanisms

**Lab Assistant**  **June 2011 – August 2011**

Institute for Basic Research**,** Staten Island, NY

* Investigated the relationship between water pollutant levels and the prevalence of autism
* Cryo-sectioned, stained, and used confocal microscopy to image brain tissue samples of mice and identify autism markers