Andrew Holmes

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EDUCATION

OLIN COLLEGE OF ENGINEERING, Needham, MA **May 2019**
Mechanical Engineering Candidate **3.71 GPA**

- Recipient of 4-year, 50% Olin Merit Scholarship
- Coursework includes: Mechanics of Solids and Structures, Thermodynamics, Dynamics, Software Design, Principles of Engineering, Products and Markets, User Oriented Collaborative Design

TECHNICAL EXPERIENCE

DESIGNING RAMP FOR DANCER IN WHEELCHAIR **Jan – May 2016**

- Co-designed with disabled dancers to create a 24' by 24' ramp set piece for wheelchair-based performance, blending mechanics, dance, and social design to make a statement about disability in society
- Project manager for team of twelve people as part of Mechanics course, handling the communication of our ideas with our client, mechanical design that balances user's needs and requirements with feasible solutions, and coordinating fabrication on CNC Shopbot

DESIGNING DETACHABLE WHEELCHAIR SHOPPING ACCESSORY **Jan – May 2017**

- "Shop Drop Roll" wheelchair frame hooks to the back of a wheelchair and easily detaches so that wheelchair users can independently unload shopping bags from their chair without risking injury
- Designed as part of four person team in Engineering for Humanity class.
- Co-designed alongside older adult as a solution that would match their exact needs

OLIN BAJA **Sept 2015 - Present**

- Student team that designs, builds, and races off-road vehicles for Society of Automotive Engineers' competitions
- Redesigned front suspension and swivel bearing inserts to replace rod ends with pressed bearings.
- Created FEA simulations to influence swivel bearing redesigns and predict performance
- Manufacture new parts using mill and lathe, build and tune car for competition

CUSTOM SKATEBOARD DESIGNER WEB APPLICATION **Nov – Dec 2016**

- Developed Python web application with Flask as final Software Design project that takes user input for weight and riding preferences to return a customized carbon fiber and hardboard skateboard design that can be laser cut
- User input modifies driving equations for the material and hexagonal patterns of the board to adjust stiffness and geometry, and is sent to OpenSCAD to automatically create a CAD drawing and .dxf file for download online

BOSTON CHILDREN'S MUSEUM PROTOTYPE EXHIBIT **March - May 2016**

- Designed and fabricated a prototype exhibit for the Boston Children's Museum as final project for Designing Resources for Empowerment and Making course
- Product is designed as a coffee table for young children with pegs that slide to mechanically adjust a central triangle and demonstrate center of mass and other geometric properties

ADDITIONAL BUSINESS AND LEADERSHIP EXPERIENCE

CAMBRIDGE INNOVATION CENTER (CIC), Cambridge, MA **Jul - Aug 2013**
Sales Team Intern

- Exposed to significant players within the Boston start-up tech scene; met entrepreneurs, innovators, and engineers while working alongside director of the space conducting online advertising and sales and competitor research

OLIN GRAND CHALLENGE SCHOLARS PROGRAM (GCSP), Needham, MA **Jun – Aug 2016**
Research and Marketing Assistant

- Re-branded and re-marketed Olin's GCSP Program, designing a new website, mentorship program, and frameworks to help students think about and National Academy of Engineering's Grand Challenges

YOUTH CITIES MARCH-TO-MAY BOOTCAMP, Cambridge, MA **Mar – May 2016**
Mentor

- Mentored students in entrepreneurial thinking as they developed their own startups in pursuit of $1500 in seed funding

ADDITIONAL SKILLS

- Software: Python, Solidworks, Onshape, Matlab
- Machining: Mill, Lathe, Laser Cutter, Shopbot