Thomas (TJ) Watson

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OBJECTIVE: To secure a full-time position related to Robotics and Mechanical Engineering that challenges me as an engineer.

EDUCATION:

Worcester Polytechnic Institute, Worcester MA
BS Robotics Engineering, BS Mechanical Engineering *(Graduated with High Honors, May 2015)*

WORK EXPERIENCE:

Uber Advanced Technologies Group *Pittsburgh, PA: 2015 - present*
Full-time: I am the engineer in charge of the thermal engineering and production design work to package the computer module for all Uber Self-Driving Vehicles. I work with computer engineers to layout PCBAs for packaging and cooling, and design the liquid cooling systems to keep the cars running at scale.

Uber Advanced Technologies Center *Pittsburgh, PA: Fall 2015*
Intern: I packaged the liquid cooling system for Uber's first Self-Driving vehicles (the Ford fusions). I also analyzed and designed the primary mounting structure to hold the computing subsystems in place.

Oak Ridge National Laboratory (ORNL) *Oak Ridge, TN: Summer 2012, Summer 2013*
Intern: Worked with the Automation, Robotics, and Manufacturing (ARM) Group developing robotic solutions for the DOE and contracting companies. Used 3D printing to develop commercially disruptive technologies in custom prosthetics and unmanned ground vehicles.

Boston Engineering *Waltham, MA: Summer 2014*
Intern: Worked with the Advanced Systems Group to develop components and subsystems for Autonomous Underwater Vehicles. Evaluated buoyancy and pitch changes based on critical vehicle dynamics for effective operation. Performed advanced FEA simulations and assisted in Human Robot Interaction (HRI) research.

Disney Research Pittsburgh *Pittsburgh, PA: Summer 2015*
Intern: Worked with the Haptics group to develop psychophysical sensations to augment interactions. Created a haptic demonstrations library by interfacing with BLE-enabled embedded hardware in the pursuit of a modular haptic system. Actualized mechatronic systems running custom library.

OTHER PROJECTS:

WALRUS Rover Major Qualifying Project (MQP)
Member of a five-student team designing an amphibious rover to aid in the search and discovery of survivors. Designed the robot to be capable of overcoming indoor and outdoor obstacles like stairs and rubble, as well as navigating in flooded environments, enabling a wider range of mission profiles than commercial systems.

BRINA Robot
Worked on a three-student team to design a robot to compete in the 2013 ASME Student Design Competition. Designed custom 3D printed parts and integrated electronics into the robot's frame. Modular design was easy to repair. One of the most-used demonstration robots on WPI campus.

SKILLS:

Computer	Mechanical Design: Solidworks (CSWA), Creo/ProE, Autodesk Inventor Simulation: Solidworks Simulation, ANSYS Mechanical and Fluent, MATLAB, Gazebo, Creo Simulate Past Languages: C, Python, C++, Java, Labview, Lisp, Visual BASIC
Machining	Manual and CNC mill and lathe, laser cutter, 3D Printing (FDM, SLA, Polyjet, DMLS), as well as band saws, drill press, grinders, shears and other hand tools.

ACTIVITIES:

FIRST Robotics (FRC) *2006-2015*
Racquetball *2010-present*
ASCEND Rock Climbing *2018-present*

HONORS:

Intel Cornell Cup Grand Prize: Winner, $10,000 prize *(2015)*
Robotics Engineering Provost's MQP Award: Awardee, cash prize *(2015)*
Robotics Engineering Outstanding Senior Award: Awardee, cash prize *(2015)*
ASME SDC Regional: Winner, chance to compete in Championships *(2013)*
WPI Design Innovation Scholarship: Winner, full tuition prize (~$160,000) *(2011)*
Solidworks Design Scholarship: Winner, monetary and CAD package prize *(2011)*
Dean's List Scholar: Awardee *(2011-present)*
τβπ Engineering Honor Society: Member, (*2015)*
ρβε Robotics Honor Society: Member, *(2013)*