

SKILLS

Engineering + Design

Conceptualization
2D Sketching
CAD Modeling
FEA and analysis based design
Injection molded & machined parts
Mechanisms, structures and machine elements
Material selection
Tolerance Analysis

Human Factors + Usability

Analytical
-UFMEA, task analysis, PCA
Empirical
-Usability testing
-Interviewing
-Affinitization of data

Software

SolidWorks
Working Model 2D
Processing + Arduino
Adobe Illustrator

Machining/Prototyping

Manual + CNC machining
Composites
Forging
Welding
Vacuum forming
Woodworking
Foundry/Metalworking
3D Hand modeling
Rapid prototyping

INTERESTS

Robotics
Vehicles and mobility platforms
Space exploration
Computational Geometry
Tinkering + physical computing
Internet of Things
Coaching/Mentoring
Parkour
Hiking
Sci-Fi novels

AWARDS

2012 Delphi Innovation Competition – 1st place

COURSES & TRAINING

AAMI Human Factors for Medical Devices Training Course, Alexandria VA. March 2015

EDUCATION

Master of Product Development May 2012
Carnegie Mellon University | Pittsburgh, PA

Bachelor of Science in Mechanical Engineering May 2006
Universidad Iberoamericana | Mexico City

EXPERIENCE

Unilife Corporation Aug 2013 – Present
Product Development Engineer | King of Prussia, PA

Developed the mechanical design, prototyped, tested and optimized four different reconstitution syringe platforms, from conceptualization to production-equivalent devices. Planned and executed the Human Factors and Usability Engineering strategy for the Auto Injection and Reconstitution business units. Designed, planned and executed several risk-based user studies to evaluate device performance, identify usability challenges, and capture both anthropometric and user force data. Defined engineering specifications based on user-exerted forces and risk analysis results.

Astrobotic Technologies Inc. May 2012 – July 2013
Lead Manufacturing Engineer | Pittsburgh, PA

Lead the manufacturing, assembly and initial testing of the Earth-demonstration prototype of the Polaris rover and it's lunar excavator payload.

Industrias HighGround May 2010 – Present
Co-Founder | Mexico City

Designed and developed specialized backpacks and wearable goods based on user research, that were successfully introduced in the parkour, graffiti and rock climbing markets.

Frias y Frias Consultores April 2008 – July 2011
Technology Consulting Partner | Mexico City

Advised on technical and usability improvements for over 30 client-developed product designs that translated into patent applications and technology transfer contracts.

Chrysler October 2006 – May 2007
Product Engineer | Mexico City

Solved a user-identified noise problem in the rear suspension of a compact vehicle, eliminating warranty and service complaints for that issue. Diagnosed and clarified a set of wiring problems in a police converted version of a sports car, making the design production-viable.

ACADEMIC PROJECTS

Integrated Product Development Spring 2012
Team member | Carnegie Mellon University, Pittsburgh, PA
Redesigned the interior of a truck cab to increase the desirability of a long-nose truck in Brazil for a major American truck manufacturer.

DELPHI 2012 Innovation Competition (Awarded 1st Place) Fall 2011 – Spring 2012
Team leader | Carnegie Mellon University, Pittsburgh, PA

Lead a team of 9 on the development of a vehicle alignment system that allows drivers to properly park and charge an electric vehicle on a wireless charging station.

Astrobotic Tech Lunar Digger Project Spring 2012
Team member | Carnegie Mellon University, Pittsburgh, PA

Analyzed dynamic stresses, defined number of composite layers, built molds and fabricated major components for the carbon fiber chassis of a lunar digger robot.

Girls of Steel FIRST robotics team Fall 2012 – Summer 2013
Mentor | Carnegie Mellon University, Pittsburgh, PA

Coached a team of high school girls on machine and tool usage in the machine shop and advised the mechanical team on the generation of a robotic climbing mechanism for the 2013 FIRST competition robot.