

**OBJECTIVE** To expand and refine my technical expertise designing complex, consumer-facing systems in a fast-paced and challenging environment while continually advancing my career within an innovative organization with ample growth opportunities.

**EXPERIENCE** **Design Engineer, Caterpillar Inc. - Advanced Electric Drive Systems Team** **(6/2011 – 9/2016)**

- > Revolutionized Caterpillar's product line by developing electromechanical drivetrain systems and components and integrating into a diverse portfolio of mining and construction equipment
- > Ideated and championed new and innovative designs from initial concept to production launch
- > Managed design activities within a cross-functional team and collaborated with several external supporting groups to maintain rigorous and dynamic schedules
- > Made critical decisions given limited information to meet demanding program timelines and budgets
- > Responsible for continually driving manufacturing process improvements and cost reductions via virtual product development and supplier collaboration
- > Refreshed existing customer requirements and revamped corresponding engineering specs
- > Pioneered new methodology for life improvement: employed analytical methods to pinpoint root causes of field failures and gain a deeper understanding of product issues affecting system life
- > International experience supporting and vetting dealer facilities onsite (South America)
- > Completed Caterpillar's Leadership & Technical Development Program: rotational program with various job roles including manufacturing, test and validation, and product lifecycle management

**Undergraduate Research Assistant, Iowa State University** **(8/2010 – 5/2011)**

- > Contributed to the forging of a new and cutting-edge analysis methodology for mechanics of thin film materials at the micro- and nanometer scale
- > Conducted lab tests, collected raw data, processed and analyzed results, wrote MATLAB programs to import and analyze data automatically, documented, and discussed findings with research advisor

- SKILLS**
- > **Programming:** C, C++, Python, ROS, MATLAB, Simulink, Visual Basic for Applications
  - > **CAD:** Creo Parametric, Pro/Engineer, SolidWorks, Autodesk Inventor, AutoCAD
  - > **PLM:** Teamcenter, Pro/Intralink, Autodesk Vault
  - > **Analysis:** Pro/Mechanica, familiar with multiple other FEA, some CFD packages
  - > **Other relevant software and skills:** Git/Github, Linux, Microsoft Office, Minitab, Weibull analysis, FMEA, Six Sigma, maker mentality
  - > **Certifications:** Six Sigma Green Belt certified through Caterpillar (June 2013)
  - > **Cultural:** familiar with Spanish language, some Latin American culture

**EDUCATION** **M.S. Robotics, Northwestern University** **(9/2016 – Present)**

- > Expected graduation: August 2017

**B.S. Mechanical Engineering, Iowa State University** **(8/2007 – 5/2011)**

- > GPA: 3.79/4.00, graduated with distinction: *magna cum laude*
- > Team PrISUm Mechanical Director: managed Mechanical Team within student-run organization which designs, builds, and races solar-powered electric vehicles against competing universities
- > Independent Study: contributed to design of low-cost, 3-wheeled, ultra-efficient commuter vehicle
- > Other projects and commitments: Human Powered Vehicle Challenge, Autodesk Student Expert
- > Scholastic recognitions: Tau Beta Pi Engineering Honor Society, Dean's List, University Honors Program

- INTERESTS**
- > Show my passion for engineering outside of required work: conceptualized, designed, built, and tested a homemade CNC router table from scratch over the course of two years
  - > Technology forms foundation of my hobbies and interests: robotics, Arduino, Raspberry Pi, quadcopter project, multitude of other design projects, learned to program C/C++/Python via MOOCs