NATHANIEL J. KAISER

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OBJECTIVE Expand and refine my expertise designing complex, consumer-facing robotic systems in a fast-paced and challenging environment within an innovative organization with ample growth opportunities.

EDUCATION

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

> Expected graduation: August 2017
> Areas of focus: autonomy, localization and planning, machine learning, AI, computer vision, algorithm development, robot navigation, control, embedded systems, sensing
> Portfolio of projects can be found at: njkaiser.github.io/portfolio

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
> Scholastic recognitions: Tau Beta Pi Engineering Honor Society, Dean's List, University Honors Program

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
> **Other relevant software and skills:** Git/Github, Linux, Rviz, Gazebo, Microsoft Office, Minitab, Weibull analysis, FMEA, Six Sigma, maker mentality
> **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
> **Certifications:** Six Sigma Green Belt certified through Caterpillar (June 2013)
> **Cultural:** familiar with Spanish language, some Latin American culture

INTERESTS

> Show my passion outside of required work: conceptualized, designed, built, and tested a homemade CNC router table from scratch over the course of two years
> Technology forms the foundation of my hobbies and interests: robotics, Arduino, Raspberry Pi, quadcopter project, multitude of other design projects