

# Kyle Boe

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## Professional Summary

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I am currently a Mechanical Engineer at AMOS Power, based out of Cedar Falls, Iowa. I am a recent graduate of the University of Colorado Boulder with a Master's of Science Degree in Mechanical Engineering. I completed the Design Track for my Master's program and am open to work opportunities in Mechanical Engineering with an emphasis on Engineering Design and Analysis.

As a student and engineer, I have large amount of experience working in design and analysis for the agriculture industry, but have an openness to design and analysis in other industries such as renewable energy, aerospace, and automobiles. I also have thorough experience with a variety of engineering processes including CAD, FEA, DFA/DFM, plastic injection molding, sheet metal, assembly, and product testing. I have held several leadership positions throughout college and beyond, and have multiple skills and interests involving the outdoors, including tree management and outdoor equipment usage.

## Work Experience

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### **Mechanical Engineer**

Amos Power

May 2024 to Present

- Performed data analysis on real-world testing applications of an autonomous electric tractor
- Gathered data involving several test parameters and communicated this data in the form of charts and technical reports
- Designed multiple large weld fixtures for the assembly and welding of the steel frames within the tractor, created drawings to communicate these designs
- Utilized mechanical and electrical equipment to assemble the large battery packs installed on the tractors, which included installing individual cells, busbars, cell taps, cables, and mechanical components
- Executed agricultural jobs with the tractor at field locations in the Napa and Sonoma valleys to test both mechanical and electrical components
- Created drawings for high-voltage cables to be manufactured by suppliers and installed on the tractor
- Led a team in creating a costing structure for manufactured components of the tractor that could be sent to suppliers to prepare for production
- Networked with farmers, growers, managers, and investors at the World Ag Expo to share information about the tractor and encourage investment

### **Teaching Assistant**

University of Colorado Boulder

August 2023 to May 2024

- Attended labs twice per week for CAD & Fabrication class, with office hours held once per week for additional help
- Analyzed biweekly lab assignments and assisted students in solving SolidWorks design issues using prior knowledge
- Reviewed and graded quizzes and assignments, providing constructive feedback to promote proper engineering design

## **Design Engineer**

AMOS Power

May 2022 to August 2023

- Operated with Creo 4.0 software to design sheet-metal and cast parts for an autonomous electric tractor
- Designed an IP67 rated battery box which contained and interfaced with a modular battery pack supplied by CIE Solutions
- Developed detailed drawings for parts and assemblies to be released for in-house manufacturing, welding, and painting

## **Product Design Intern**

One3 Design Inc.

January 2021 to August 2021

- Utilized Creo 4.0 software for sheet-metal design of parts and assemblies for an autonomous electric tractor
- Analyzed complex paths for motion of frame components and addressed potential interferences in the design
- Evaluated concepts for fastening or welding parts and subassemblies and ensured assembly feasibility post-weld

## **Mechanical Design Intern**

Ag Leader Technology

January 2020 to August 2020

- Utilized Creo 4.0 and Schematics software for plastic and cable design, as well as new drawings and revisions
- Performed new product testing and fit ups using test stands, a hydraulic bench, and in-house agricultural equipment
- Completed tasks in the plastic injection molding process including mold approval forms and inspection reports

## **Structural Design Intern**

Hagie Manufacturing Co.

May 2019 to August 2019

- Operated with SolidWorks software to complete a finite element analysis of the interior section of a sprayer boom
- Simulated high-stress events by applying remote and distributed loads upon the body and examining results
- Formulated multiple professional presentations showcasing findings from analysis studies and areas of concern
- Utilized Abaqus software to perform FEA studies on 2D and 3D elements, provided written reports on the results

## Education

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### **Master of Science in Mechanical Engineering**

University of Colorado Boulder-Boulder, CO

August 2022 to May 2024

### **Bachelor of Science in Mechanical Engineering**

Iowa State University-Ames, IA

August 2017 to May 2022

## Skills

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- Project management
- machining
- outdoor equipment usage
- Mechanical Design
- public-speaking
- Drafting
- drawing
- Excel
- Mechanical Knowledge
- oral presentation
- SolidWorks
- MATLAB
- CAD
- Abaqus
- Proficient in Creo
- Plastics Injection Molding
- sketching
- Mechanical Engineering
- wood-working
- GD&T
- Manufacturing
- Non-technical skills include writing

## Patents

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### **Lift Assist for an Electrically Driven Hitch on a Robotic Vehicle (#US 11,547,035 B1)**

January 2023

A pair of link arms are raised by an outward stroke of both an electric actuator and a spring

### **Removable Battery Unit for an Electric Vehicle (#US 11,407,298 B1)**

August 2022

A robotic vehicle with a battery unit configured for connection to the chassis of the vehicle

### **Modular Robotic Vehicle (#US 11,364,959 B1)**

June 2022

A robotic vehicle with modular track assemblies that are separable from the chassis

### **Adjustable Vehicle Axle (#US 10,549,579 B1)**

February 2020

A pair of wheels coupled together by an adjustable axle mechanism