

# Darren Biskup

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## EDUCATION

### University of Illinois, Urbana-Champaign

GPA: 3.93/4.00

*B.S. Mechanical Engineering, Computer Science Minor*

*May 2024*

- *James Scholar Honors Program, Dean's List*
- *American Society of Mechanical Engineers*

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## RELEVANT COURSEWORK

- Engineering Materials, Heat Transfer, Signal Processing, Statics, Dynamics, Solid Mechanics, Fluid Dynamics, Dynamics of Mechanical Systems, Thermodynamics, Mechanical Design, Design for Manufacturability, Differential Equations, Linear Algebra with Computational Application, Algorithms and Data Structures, Physics Mechanics/E&M, Electric/Electronic Circuits

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## SKILLS

**Computer Aided Design:** CATIA 3DEXPERIENCE, Autodesk Fusion360, SolidWorks

**Computer Programming:** C++, Java, Kotlin, and Python. Self-taught HTML and CSS

**Technical:** Design for Injection Molding, Battery Pack Design, DFM, GD&T, Mechanical Design

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## EXPERIENCE

### Skydio

MAY 2022 - AUGUST 2022

*Product Design Engineering Intern*

- Design for Injection Molding: Utilized CATIA 3DEXPERIENCE to redesign the Navigation Camera mounting mechanism for the company's next generation performance quadcopter drone.
- Communicated with overseas vendors in China to implement design change, ensuring injection moldability and minimal lead time. Kicked off injection mold retooling for newly redesigned Navigation Cameras.
- Designed and prototyped the mobile tablet adapter for the next generation drone controller using FDM and SLS 3D-Printing. Received DFM feedback from injection molding vendor.
- Worked with Manufacturing Engineers to design wire routing layout for drone RF cables, board to board connections, 3-phase motor power cables, LED cables.
- Designed custom wire clips and wire guides for injection molding, prioritizing ease of assembly while also taking into consideration potential interference from RF-sensitive electronics.

### Lucid Motors

MAY 2021 - AUGUST 2021

*Mechanical Engineering Intern, High Voltage*

- Battery Pack Development: Improved design for the high voltage chain reducing the number of bolts required to join busbars by 50% per joint.
- Conducted thermal analysis on busbar joints with new design to evaluate the new design's effect on car's horsepower, range, efficiency, and thermal endurance.
- Devised a method of measuring resistance of busbar joints up to 50% more accurate than the HIOKI low ohmmeter.
- Planned, conducted, and interpreted stress tests on bolted busbar joints to analyze how joint design performs at end of life.
- Collected and analyzed data on heat generation from bolted busbars joints, and used this data to calculate theoretical horsepower and efficiency loss of specific joints.

### Eco Illini Supermileage

JAN 2021- PRESENT

*Battery Subteam Lead*

- Newly designed battery pack of prototype efficiency electric vehicle to compete in the upcoming Shell Eco-marathon.
- Conducted range, energy density, power output calculation to design a new cell configuration around the newly chosen battery cell. Decreases pack size by 50% while increasing volumetric energy density by 33% over previous generation pack
- Spot-welded nickel busbar strips for cell connection. Designed a compact hexagonal pack enclosure to hold cells together.
- Worked across multiple subteams to design and waterjet a carbon fiber Nomex firewall separating the driver's cockpit and dangerous powertrain components.

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## PROJECTS

### Subwoofer Restoration

- Used power tools to grind and replace a pair of worn subwoofer cones, then used a tuning software to attach the precise amount of mass to the speaker cones to resonate with the passive radiator.