

Drew Geiser

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EDUCATION

University of Wisconsin – Madison | Madison, WI

Bachelor of Science, Biological Systems Engineering – Machinery Systems

May 2026

GPA: 3.15/4.0; *Dean's List*

Relevant Coursework: Fluid Dynamics, Thermodynamics, Design of Machine Elements, Mechanics of Materials

ENGINEERING EXPERIENCE

Tolerance Masters | Minneapolis, MN

June – Aug 2025

Engineering Intern

- Designed custom tools, fixtures, and organizational systems in SolidWorks to improve machining efficiency
- Created detailed CAD models from aerospace drawings to support manufacturing and shop-floor operations
- Prototyped and fabricated custom components using 3D printing, including collet trays and deburring tools
- Performed dimensional inspection on thousands of aerospace components to verify tight tolerance requirements
- Developed Excel templates to organize, update, and verify first article inspection documentation

Anex-Wang Lab | Madison, WI

May – Nov 2024

Undergraduate Research Assistant

- Performed filtration, strength testing, and particle size analysis to evaluate concrete material performance
- Prepared stoichiometric chemical mixtures and neutralized high-pH solutions to ensure safe laboratory testing
- Fabricated metal and polymer molds to improve testing efficiency and consistency across mortar samples
- Guided other research assistants through experimental procedures while ensuring safe laboratory practices

ENGINEERING DESIGN PROJECTS

Automated Lighting System for Precision Agricultural Robot | Senior Design

- Led CAD modeling and mechanical assembly design for components optimized for fabricating and 3D printing
- Fabricated and refined mechanical components to ensure compatibility with FarmBot motion and clearance
- Evaluated energy performance, demonstrating a projected 42.9% reduction versus fixed-height lighting
- Applied failure modes and effects analysis to guide safety-focused design changes for the lighting system
- Performed deflection calculations and testing on the drive shaft and frame to verify structural integrity

Larval Mosquito Detection Device

- Designed a functional larval detection device with a total material cost under \$250 for practical deployment
- Developed and trained an image recognition model to distinguish mosquito larvae from debris in water samples
- Created detailed CAD models and drawings in SolidWorks to support fabrication and mechanical assembly
- Collected and labeled approximately 100 images across controlled trials to train and validate the detection model

LEADERSHIP AND INVOLVEMENT

Tau Kappa Epsilon | Madison, WI

Nov 2023 – Nov 2024

Vice President

- Managed a \$70,000 budget and logistics for a 250-person formal, coordinating lodging, transportation, and events
- Directed 12 council committees responsible for academic, philanthropic, athletics, and chapter-wide initiatives
- Collaborated with the executive board to enforce policy violations, ensuring fair and consistent standards

TECHNICAL SKILLS

SolidWorks (Parts, Assemblies, Drawings), FEA | Prototyping & Fabrication (Machining, 3-D Printing, Mechanical testing, Shop tools, Circuits) | Python, Arduino, Sensor Integration, Raspberry Pi, MATLAB, EES | Microsoft Office