

# Sam Bulthuis

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## EDUCATION

**BS Mechanical Engineering**  
**BS Theatre and Entertainment Technology**  
**Minor in Art**  
GPA: 3.50

Michigan Technological University  
Houghton, MI  
**December 2020**

## INTERNSHIP EXPERIENCE

Mechanical Engineering Intern: Dematic, June 2020 – Present

- Produced Mechanical Installation drawings for various distribution center automation systems for facilities across the United States
- Determined part quantities for netting, guard rail systems and safety signs as well as produced installation drawings for specified hardware across large distribution centers based on predetermined safety standards.
- Detailed Equipment lists for onsite technicians to streamline installation across large facilities.

Mechanical/Controls Integration Intern: TAIT, June – August 2019

- Worked alongside Mechanical Integrators on several automated scenic elements for upcoming Universal Studios theme park attractions, providing input for redesigns and final assembly of scenic elements
- Planned, organized and led a team of electricians on the cable management for the first Kinetic 4K Center-Hung score board in the world, installed in the Wells Fargo Center in Philadelphia
- Worked on the production of various arena tours in rehearsal and onsite venues including Queen and Adam Lambert's, *The Rhapsody World Tour* and the Backstreet Boys, *DNA World Tour*, among others

Mechanical Design & Draftsman Intern: Flying by Foy, May – August 2018

- Worked extensively on the Mechanical Design for the over-house performer fly system used in the production of *Harry Potter and the Cursed Child*, Melbourne, Australia
- Manufactured and Assembled several elements and detailed several smaller flying effects used in *Harry Potter and the Cursed Child*, Melbourne, Australia
- Worked on converting a manual over-stage performer fly system to an automated system as well as increasing the maximum allowable performer load for Disney's *The Lion King*, Hamburg, Germany

## MECHANICAL ENGINEERING SENIOR DESIGN PROJECT

In-Field Pinion Gear Cutting Apparatus: BNSF Railway, January – December 2020

- Worked on a team with 5 mechanical engineering students to design and manufacture a device for removing seized traction motor pinion gears from stalled locomotives in field.
- Proposed tool will streamline the cutting process and ensure the operator remains a safe distance from the cutting operation.
- Lead the mechanical design for the project and produced all CAD models and build drawings for the final prototype.

## COMPUTER/TECHNICAL SKILLS

- Autodesk Inventor – Proficient
- SolidWorks – Experienced
- AutoCAD – Familiar
- Siemens NX – Experienced
- Microsoft Office Suite – Proficient
- MATLAB – Experienced
- ANSYS – Familiar/Experienced
- 3D Printing – Proficient
- Carpentry – Experienced
- Automation Control Systems – Familiar

## THEATRICAL PRODUCTION EXPERIENCE

- Creative & Technical Designer/Lead Fabricator – Michigan Tech Production of *Quincy Haunted Mine*, October 2020
- Assistant Technical Director – Michigan Tech Production of *The Importance of Being Earnest*, April 2020
- Master Electrician – Michigan Tech Production of *Black Comedy*, October 2019
- Head Flyman, Head Rigger, Assistant Scenic Designer & Scenic Artist – Michigan Tech Production of *Sunday in the Park with George*, April 2019
- Carpenter – Michigan Tech Production of *Quincy Haunted Mine* and *On the Verge*, October - December 2018
- Light Board Operator – Michigan Tech Production of *When You Comin' Back, Red Ryder?*, March 2018
- Props Master & Electrician – Michigan Tech Production of *Fires in the Mirror*, December 2018
- Run Crew – Michigan Tech Production of *West Side Story*, April 2017