Michigan Technological University
Undergraduate of Mechanical Engineering

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# Kade Nielsen

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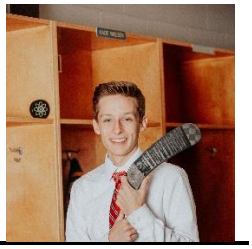

## SUMMARY

Fourth year mechanical and aerospace engineering student seeking internship and work experience. Open to learning and adapting to a team-based or individual position in the fields of mechanical engineering and aerospace engineering.

## EDUCATION

Michigan Technological University | Houghton, MI
**BS Mechanical Engineering** | Aerospace Engineering Minor **Expected May 2024**

Midland High School | Midland, MI **Graduated May 2019**

## WORK EXPERIENCE

Magline, Inc. | Standish, MI **May 2022 – August 2022**
*Mechanical Engineering Intern*

- Performed duties of a full-time mechanical engineer under direction of Magliner's established engineering team
- Primarily tasked with precision measuring, reverse engineering, product design, computational simulation, complex mechanical analysis, and hands-on manufacturing and production work
- Developed relevant engineering principles to complete production parts and manufacturing instructions across multiple disciplines of engineering and production
- Became familiar with PDM and other collaborative CAD design programs, as well as Infor Visual material management software
- Balanced cost, safety, functionality, and overall quality of designs to produce cost-effective and functional products
- Learned valuable workplace experience relating to workplace expectations, teamwork, communication, and professionalism

MTU Multiplanetary INnovations Enterprise (MINE) | Houghton, MI **September 2022 - Present**
*Student Mechanical Engineer – Lunar Trencher Support Gantry Design Subteam*

- Performed computational modelling, FEA, CAE, computationally driven optimization, cost analysis, and systems integration for a bucket ladder system related to research pertaining to sediment excavation on the surface of the moon
- Worked with other engineering students (graduate and undergraduate) to produce meaningful data to be published in a technical journal at a later date
- Strengthened beam deflection and geometry optimization skills through specializing in analysis, design, and optimization of various structural members which support the lunar trencher while it undergoes testing
- Strengthened constraint-based engineering skills by designing components to be used in near-vacuum environments, considering factors such as outgassing and effects of pressure on structural members

MTU Multiplanetary INnovations Enterprise (MINE) | Houghton, MI **September 2021 – May 2022**
*Student Mechanical Engineer – Adaptive Boom Arm Superstructure Design Subteam*

- Worked on simulation, original design, and physical prototyping for a robotic arm which is covered by a non-disclosure agreement
- Primary focuses included computational analysis and modeling, optimization, FEA/CAE, and CAD modeling
- Worked under the principles of systems engineering to ensure adequate documentation throughout the project's life cycle

City of Midland | Midland, MI **June 2021 – August 2021**
*Civil Engineering Intern*

- Worked in an engineering/surveying team of three members performing preliminary and operational construction staking and surveying for road work
- Learned vital engineering skills including teamwork, taking precise measurements, communication (especially directly between engineers and construction crews)

## COMPUTER and TECHNICAL SKILLS

- AUTOCAD
- Solidworks
- Siemens NX (modeling and FEA)
- MATLAB
- MS Office Suite (Especially Excel)
- Google Office Suite

## LEADERSHIP

**Executive Board Member (Various Roles)**, Rocket League at MTU **July 2022 - Present**

- Ideated and organized events to promote face-to-face interaction and outdoor activities for club members
- Aided in the recruitment of new members to the club
- Competed in esports tournaments and managed which leagues our organization was a member of

**Assistant Secretary**, Michigan Tech Recreational Hockey Club **January 2021 – December 2021**

- Managed communications between the organization executive board and over 120 club members
- Helped ideate innovative ways to keep members involved and connected during the COVID-19 pandemic

**Captain**, Midland High School Varsity Hockey Team **September 2018 – March 2019**

**Captain**, Michigan Tech Esports Club Rocket League Teams (various) **August 2021 – Present**

- Managed communication and registration of club esports teams with esports tournaments

## CO-CURRICULAR INVOLVEMENT

**Michigan Technological University Men's Club Hockey Team Member** **September 2019 – Sept 2020**
**Michigan Technological University Recreational Hockey Club** **September 2019 – December 2021**
**Michigan Technological University Esports Club** **January 2021 – Present**
**Rocket League at MTU (Student Organization)** **January 2021 - Present**
**IM Hockey Team Member** **November 2019 – December 2021**
**IM Rocket League Team Member** **January 2021 – Present**

## INTERESTS

- Hiking
- Skiing
- Birdwatching
- Photography
- Machining/Metalworking
- 3D Printing
- Video Games
- Motorcycling