Hirsh Kabaria

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# EDUCATION­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **­­****University of Michigan** | **May 2024** |
| Aerospace Engineering, Bachelor of Science in Engineering | Ann Arbor, MI |

Computer Science, Minor

3.6 / 4.0 GPA

Notable Classes: Dynamics and Vibrations, Aerodynamics, MATLAB Applications for Engineers, Aerospace Structures and Solid Mech

Honors and Memberships: ΣΓΤ Honor Society (Fundraising Lead ’22-’23, Initiated Dec ’21), Dean’s List (Winter ’20), AIAA (Since ’20)

# SKILLS \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Engineering Administration:** Project Management, Business and Government Relations, Team Leadership, Systems Engineering

**Engineering:** Finite Element Analysis (Ansys Mechanical), CAD (SolidWorks & NX w/ Teamcenter), MATLAB

**Manufacturing:** Manual Lathe, Composite Layup, Waterjet, Metal and CO2 Laser Cutter

**Computer:** C++, Java, Ubuntu, Adobe CC (Lightroom Classic, Photoshop, Premiere, Illustrator), MS Office Master Certification

# EXPERIENCE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Michigan Aerospace Communications,** *Summer Assistant* | **Summer 22** |
| University of Michigan Department of Aerospace Engineering | Ann Arbor, MI |

* Created a narrative to present the best of Michigan Aerospace to our followers and share our values with the world.
* Raised morale and built a community through graphics, giveaway merchandise, and social media.

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| **Nosecone and Recovery,** *Senior Engineer* | **Fall 21, Winter 22, Summer 22** |
| Michigan Aeronautical Science Association (MASA) Rocket Team | Ann Arbor, MI |

* Coordinated requirements, deadlines, funding, and designs between the nosecone, recovery, and airframe teams to facilitate nosecone attachment and separation as part of our recovery sequence.
* Laid up multiple couplers and airframes, delivering flight components ahead of schedule despite redesign due to equipment failures.
* Conducted full system testing and integration with deployment, including redesign of pyrotechnic bolt.

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| **Tank Pressure Control Vibration Testing,** *Engineer* | **Summer 2022** |
| Michigan Aeronautical Science Association (MASA) Rocket Team | Ann Arbor, MI |

* Designed mounting hardware for high pressure systems with a resonant frequency out of the test range.
* Aided in the assembly of pressure systems, data recording, and test setup.

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| **Business Division,** *Lead* | **Summer 21, Fall 21, Winter 22** |
| Michigan Aeronautical Science Association (MASA) Rocket Team | Ann Arbor, MI |

* Led a team of 5 to manage over $100,000 in funding, design team merchandise, and oversee public relations.
* $28,000+ raised in NASA and UMich grants, corporate sponsorships, and crowdfunding.
* 600% growth of the team’s Twitter, Facebook, and LinkedIn pages through engaging visual content.
* Collaborated with NASA, airport, and local authorities to find a suitable liquid engine test site.
* Panelist at AIAA SciTech 2022 discussing student rocketry and the creation of the Academic Rocket Launch Alliance.

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| **MACH 6,** *FEA and Structures Engineer* | **Winter 22** |
| MACH AIAA Design-Build-Fly Team | Ann Arbor, MI |

* Simulated loads on the wing box and motor mount and proposed a composite design for the motor mount to better survive given loads.
* Designed a one-step removable rear fairing for easy and quick access to the aircraft cargo bay during competition.

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| **Fin Testing,** *Project Lead* | **Summer 21** |
| Michigan Aeronautical Science Association (MASA) Rocket Team | Ann Arbor, MI |

* Designed a rotating test stand for the fin can, allowing us to evaluate induced roll and fin loading in UM’s 150 mph 5’ x 7’ wind tunnel.
* Met with fin team, wind tunnel management, and senior MASA engineers to determine requirements and timelines for wind tunnel testing.

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| **Separation Mechanism,** *Engineer* | **Winter 21, Summer 22** |
| Michigan Aeronautical Science Association (MASA) Rocket Team | Ann Arbor, MI |

* Conducted FEA and multiple redesigns to ensure survival given significant bending moment loads on the nosecone-airframe interface.
* Ran trade studies to find the best COTS parts to ensure successful separation in an abort case.