

Jonathan Zak

Boston, MA | (781)-296-5804 | jonathan.w.zak@vanderbilt.edu

EDUCATION

Vanderbilt University, Nashville, TN

May 2024

Bachelor of Engineering in Mechanical Engineering, *Minor* in Material Science

GPA: 3.88 / 4.00

Coursework: Materials Science, Structural Engineering, Modern Electronic Materials, Thermodynamics, Circuits, Fluid Mechanics, Machine Design, Control Systems, Instrumentation, Aerospace Propulsion, Mechatronics, FEA

Honors: Dean's List (All Semesters), Belmont Golf Scholarship (2022)

PROFESSIONAL EXPERIENCE/LEADERSHIP

Vanderbilt Combustion Laboratory, Nashville, TN

August 2022- Present

Research Assistant

- Investigate hydrogen enriched ammonia combustion using species laser tagging to determine ammonia's viability as a fuel source
- Develop experimental and computational techniques to determine extinction stretch rates and thermal properties of ammonia-hydrogen produced flames in a fuel lean environment

Vanderbilt Aerospace Design Laboratory

January 2023 – Present

Field Engineer Team

- Assist in design and construction of rocket for NASA Student Launch Competition

Vanderbilt University, Nashville, TN

August 2022- Present

Engineering Tutor

- Tutor students in the subjects of Physics, Calculus, Static Analysis, Material Science for 8 hours per week
- Translate complex math and physics concepts to help students apply their learning to problems

Vanderbilt Motorsport Club, Nashville TN

August 2020 – September 2021

General Member

- Constructed formula style car using machine tools and CAD to compete in competition
- Developed understanding of car component functions throughout the construction of car

YMCA Camp Coniston, Croydon, NH

June – August 2020 and 2021

Woodshop Director

- Trained staff of seven to operate drill presses, chop saws, scroll saws, and other wood tools
- Oversaw safety of and taught over 150 children how to design and build wood projects

Division Leader

- Oversaw and trained staff of 15 on management, conflict resolution, child development
- Planned and operated nightly activities to enhance camp experience for over 150 children

Vanderbilt Rock Climbing Club, Nashville TN

March 2022 - Present

Executive Board, Transportation Coordinator

- Coordinate practices, outdoor climbing trips, out of state competitions, and safety for 85 member climbing team
- Meet with executive board and University to make decisions on behalf of club

TECHNICAL SKILLS

- Languages: Java, Python
- Proficiency in: ANYS FEA, SolidWorks, Excel, PowerPoint,
- Introductory Training on lathes and mills

INTEREST/COMMUNITY

- American Society of Mechanical Engineers: Vanderbilt Chapter
- Mountaineering/Ice Climbing: Alaska, Northeastern USA