

# NAVIN BHATTARAI

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## EDUCATION

### Washington University in St. Louis, MO

- Bachelor of Science, Mechanical Engineering
- Master of Science, Aerospace Engineering
- Honors: *Lee Hunter Scholarship*

GPA: 4.0/4.0

Expected Graduation May 2027

Expected Graduation May 2028

### Truman State University, Kirksville, MO

- Bachelor of Arts, Physics
- Honors: *Sigma Pi Sigma, International President's Honorary Scholarship, 7+ Merit-Based Endowed Scholarships*

Attended: 2022–2025, GPA: 4.0/4.0

Degree Conferral Expected May 2026

**Relevant Coursework:** Manufacturing Processes, Parametric CAD (SOLIDWORKS, OnShape), Advanced AutoCAD (2D/3D), Thermodynamics, Fluid Mechanics, Statics and Mechanics of Materials, Solid Mechanics, Dynamics, Machine Shop (Lathe & Mill), Vibrations and Waves

## TECHNICAL EXPERIENCE

### Design-Build-Fly, Structures Sub-Team — *Structures Engineer*

Aug 2025 – Present

Washington University in St. Louis, MO

- Design and analyze wing spars and fuselage frame for competition RC aircraft using SolidWorks
- Optimize structures to ensure CAD designs are manufacturing-ready for laser cutting, simplifying fabrication and assembly
- Collaborate with aerodynamics & propulsion sub-team to ensure structural integrity meets flight performance specifications

### Dye-Sensitized Solar Cells (DSSCs) — *Research Associate*

Feb 2024 – Aug 2025

Truman State University, Kirksville, MO

- Fabricated and tested 30+ solar cell prototypes, achieving up to 9.90% power conversion efficiency with 55% fill factor
- Conducted UV-Vis spectroscopy and I-V measurements to compare plant-based dyes for renewable energy applications
- Developed a repeatable assembly process improving results and consistency across multiple prototypes
- Presented experimental findings at 2025 APS Prairie Section demonstrating natural dyes as eco-friendly alternatives

## WORK EXPERIENCE

### McKelvey School of Engineering — *Course Assistant, Statics and Mechanics of Materials*

Aug 2025 – Present

Washington University in St. Louis, MO

- Support 150+ students through weekly office hours, exam review sessions, and homework assistance in structural mechanics
- Grade assignments and provide feedback, helping students improve problem-solving approaches and exam performance

### Center of Academic Excellence — *Academic Peer Tutor*

Aug 2023 – May 2025

Truman State University, Kirksville, MO

- Tutored 125+ students in Physics (Mechanics, E&M), Mathematics (Calculus, Differential Equations), and Statistics
- Conducted individual and group sessions focused on problem-solving strategies, exam preparation, and concept mastery

### Student Union and Involvement Services — *Building Operations Manager*

Aug 2022 – Aug 2025

Truman State University, Kirksville, MO

- Coordinated 100+ events over 3 years for 45+ organizations, handling equipment setup, security, and emergency response
- Trained and supervised 6+ assistants ensuring compliance with safety protocols and operational standards

## PROJECTS

**Smart Humidifier:** Automated control system using Raspberry Pi and sensors for real-time environmental control

**3D Printed Designs:** Temple shrine, Watch charger stand, Desk organizers, and Ford F-150 miniature using SOLIDWORKS

## SKILLS

**Design & Manufacturing:** SOLIDWORKS (DFM/DFA), OnShape, AutoCAD, Machining, 3D Printing (FDM), Soldering

**Programming & Analysis:** Python, C++, MATLAB, LaTeX, R, Mathematica

## LEADERSHIP & PROFESSIONAL DEVELOPMENT

### Society of Physics Students — *Student Representative*

Aug 2024 – May 2025

Truman State University, Kirksville, MO

- Developed first-year student advising initiatives including course placement guidelines and schedule optimization strategies
- Represented club of 15 members in faculty meetings, advocating for curriculum improvements and organizing social events

### Namaste Nepal, Nepalese Student Association — *Treasurer*

Aug 2023 – May 2025

Truman State University, Kirksville, MO

- Managed \$3,000+ budget through Fund Allotment Council proposals, optimizing costs and resource allocation
- Coordinated logistics for biannual cultural events with 200+ attendees including venue, catering, and supplies