

# Fangzhou Wang

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## EDUCATION

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Georgia Institute of Technology, Atlanta, Georgia

August 2020 - Present

*Bachelor of Science in Mechanical Engineering*, Minor in Computing & Intelligence

Cumulative GPA: 4.0

## PUBLICATIONS

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Gmeiner, F., Kim, J., Wang, F., & Jacobs, L., J. (2023). "Nonlinear ultrasonic techniques to quantify oxidation damage in carbon/carbon composite material." *NDT & E International*, Vol. 140, Dec. 2023, pp. 102966.  
<https://doi.org/10.1016/j.ndteint.2023.102966>.

## AWARDS & HONORS

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President's Undergraduate Research Award (PURA)

December 2023

- Competitive research grant to support 10 Mechanical Engineering undergraduate researchers per semester

Faculty Honors

Fall 2020 – Fall 2023

- Awarded to full-time undergraduate students who maintain a GPA of 4.0 in the preceding semester

## RESEARCH EXPERIENCE

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Water-Energy Research Lab (WERL) | PI: Dr. Akanksha Menon | Atlanta, Georgia

July 2023 - Present

*Undergraduate Research Assistant*

- Established an experimental setup in a lithium-chloride humidity-controlled chamber with laser and LED systems
- Designed and integrated custom components into existing optomechanical parts for precise measurement
- Employed LabVIEW for capturing and logging measurements water mass, laser power, and temperature
- Performed data analysis with MATLAB to assess the relationship between light intensity and evaporation rate

Nanoscale Thermal Radiation Laboratory | PI: Dr. Zhuomin Zhang | Atlanta, Georgia

May 2023 - Present

*Undergraduate Research Assistant*

- Conducted reflectance/absorptivity measurements on Cappadocian tuff samples in visible and near-infrared regions spanning a wavelength range from 380 to 1790 nm, employing a monochromator with an integrating sphere

Non-Destructive Evaluation (NDE) Lab | PI: Dr. Laurence Jacobs | Atlanta, Georgia

May 2022 – May 2023

*Undergraduate Research Assistant*

- Developed a calibration scheme in MATLAB for a novel Rayleigh wave evolution experimental setup
- Automated LabVIEW to conduct frequency sweeps to identify optimal ultrasonic transducer frequency
- Assessed relative material nonlinearity parameter through Fast Fourier Transform, employing a Hann window
- Explored dispersion of yttria-stabilized-zirconia coated nickel plates through phase spectrum inversion techniques
- Fabricated contact wedges for 5 MHz and 20 MHz ultrasonic transducers to minimize signal attenuation

## PROJECTS

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Computational Fluids Dynamics | Atlanta, Georgia

November 2023 – December 2023

- Investigated roller effect in low head dams using a multiphase flow model in COMSOL Multiphysics
- Determined relationships between inlet velocity, dam height, and Froude number with Level Set Method

Wreck Racing Competition Car | Atlanta, Georgia

August 2020 - February 2022

- Enhanced cooling systems by assessing radiator designs while adhering to tight budget constraints
- Modified cooling system to accommodate unique mounting positions for an Acura V6 engine
- Designed a novel A-frame suspension system for a Chevrolet S-10 chassis to enhance vehicle performance

## LEADERSHIP EXPERIENCE

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Campus Recreation Center Climbing Wall | Atlanta, Georgia

August 2021 – Present

*Student Assistant*

- Instructed climbers across diverse skill levels in a range of climbing techniques and safety practices
- Coordinated team-wide safety trainings to keep the staff updated with latest industry standards and best practices

- Performed routine inspection of climbing gear, ropes, holds, and wall anchors to ensure proper functionality

**Georgia Tech Student Foundation / Freshman Leadership Initiative** | Atlanta, Georgia August 2020 – May 2023  
*Allocations Committee Director, Marketing Committee Director, FLI Member, Board of Trustees Member*

- Supported transformative student initiatives with innovation and impact through \$40,000 in funding each semester
- Implemented procedural enhancements to promote impartial and comprehensive evaluation in funding student orgs

**Wreck Racing** | Atlanta, Georgia

August 2020 – May 2022

*Safety Officer, Hazmat Coordinator*

- Developed innovative methods for safe disposal of hazardous materials accumulated in the club's storage unit
- Established a tiered safety program, equipping members with knowledge and skills to safely operate power tools

#### **SKILLS & INTERESTS**

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- **Software:** COMSOL Multiphysics, Solidworks, Fusion 360, ABAQUS, COMSOL, NX
- **Prototyping:** 3D Printing, Milling, Welding, Grinding, Laser Cutting, Waterjet Cutting
- **Coding:** Python, MATLAB, Java, C, C++, LabView, Digital Signal Processing (DSP), Machine Learning, CNNs
- **Communication:** Technical Writing, Research Presentation Design, Grant Writing, Public Speaking
- **Languages:** English, Mandarin, French, Cantonese, German