Yaxuan (Michael) WANG

Acoustic Sensing and Functional Materials (ASFM) Laboratory, Research Assistant, Madison, WI 53706
+1 (608)-733-9315 | michael.wang@wisc.edu | https://www.linkedin.com/in/michael-wang-3a42661b5/

EDUCATION

Department of Electrical and Computer Engineering, University of Wisconsin – Madison (UW Madison)

- *PhD* candidate in Electrical and Computer Engineering, GPA: 3.56/4.0 — Aug. 2022-Dec. 2025 (Expected)
- *M.S.* in Electrical Engineering, GPA: 3.56/4.0 — Jan. 2020-Aug. 2022

Department of Materials Science and Engineering, University of Wisconsin – Madison (UW Madison)

- *M.S.* in Materials Science and Engineering, GPA: 3.45/4.0 — Sep. 2018-Dec. 2019

School of Materials Science and Engineering, University of Science and Technology Beijing (USTB)

- *B. Eng.* in Nanomaterials and Nanotechnology, Major GPA: 3.66/4.0 — Sep. 2014-Jun. 2018

SUMMARY

PhD candidate specializing in **acoustic metamaterials, phononic crystals, ultrasonic sensing and signal processing**. Experienced in both **simulation (COMSOL, MATLAB)** and **experimental fabrication/characterization**. Seeking **R&D, simulation, or electrical engineering** roles in advanced materials, acoustic and electrical systems.

SKILLS

- **Computer:** Commercial finite element software COMSOL Multiphysics, AutoCAD, MATLAB, Python.
- **Analytical:** Finite element analysis, signal processing, vibration & acoustic analysis, 3D printing, weaving fabrication, ultrasound generation and detection, finite-difference time-domain method,
- **Language:** English(fluent), Mandarin(native).

RESEARCH EXPERIENCE

Design and Experimental Demonstration of Fabric Phononic Crystals — Jun. 2022– present

Advisor: Prof. Chu MA (Department of Electrical and Computer Engineering, UW Madison)

- Designed quasi-2D fabric phononic crystal structures; studied band dispersion and out-of-plane vibration transmission.
- Fabricated woven samples with patterned regions; conducted mechanical & acoustic testing.
- Measured vibration transmission with signal analysis and evaluated overall performance.

Underwater ultrasonic topological waveguides — Jun. 2020 – present

Advisor: Prof. Chu MA (Department of Electrical and Computer Engineering, UW Madison)

- Designed a quasi-2D acoustic crystal of hexagonal lattice, simulated band dispersion relationship, and ultrasound transmission inside the acoustic crystal.
- Fabricated samples via additive 3D printing, characterized geometry with optical microscopy, and refined COMSOL models.
- Measured ultrasound transmission using a signal analysis system and evaluated acoustic performance.

PUBLICATIONS & CONFERENCES

Underwater ultrasonic topological waveguides by metal additive manufacturing

- Author, Applied Physics Letters 120.14 (2022): 141702.

Design and experimental demonstration of fabric phononic crystals

- Author, 188th Meeting of the Acoustical Society of America, New Orleans, LA, May 2025

TEACHING

- ECE 401: Electro-Acoustical Engineering — Spring 2023
- ECE 431: Digital Signal Processing. — Spring 2025

AWARDS

- ECE 2022 Wisconsin Distinguished Graduate Fellowship (WDGF) — Aug. 2022
- Student Research Grants Competition – Conference Presentation Funds — Mar. 2025