Thomas Pierson

Albuquerque, New Mexico – USA

📱 (505) 208 1982   •   ✉ tpierson741@gmail.com
🌐 https://www.ttpierson.com/

Education

New Mexico Institute of Mining and Technology   **Socorro, NM**
BS in Mechanical Engineering   *2022–2026*
GPA: 3.85/4.0 | Minor in Spanish | Expected Graduation: May 2026
Research focus: Intelligent Systems, Sensor Design, and Mechatronics

Research Projects

ISS Guided Wave Experiment
Intelligent Sensing and Structures Laboratory   *2024-present*
– Developed a first-of-its-kind ISS payload to study elastic guided wave propagation.
– Fit sensors, designed data processing algorithms for in-space structural health monitoring.
– Coauthor of upcoming SPIE conference paper (2026).

Optical Strain Sensing for Pipe Monitoring
Intelligent Sensing and Structures Laboratory   *2023-2024*
– Calibrated and tested FBG optical sensors for their use in for pipe systems.
– Developed data acquisition methods for continuous valve monitoring.

Mechano-luminescent Composite Sensor
Lab for Smart Materials and Structures   *2024-2025*
– Applied ML-based image processing for crack detection using mechanoluminescent materials.
– Conducted emissivity testing for strained materials, spin-coated and tested thin-film devices.
– coauthor of paper to be presented in 2026

DoD Space Vehicles Directorate
Air Force Research Lab, Kirtland AFB   *2024*
– Supervised DoD-sponsored project in Space Vehicles Directorate.
– Mentored engineering students in robotics and system integration.
– Presented project results at New Space Nexus Summit.

Optical and Ultrasonic Sensor Package
NASA Human Lander Challenge   *2025*
– Team lead and organizer
– Research and design of non-destructive sensor package for leak detection in lunar base exterior.

Capstone Projects
NMT Mechanical Engineering Department   *2024-2026*
– CubeSat frame design for optical sensor housing.
– Solar water purifier R&D.

Presentations

2026: Conference Paper, SPIE SS/NDE (Accepted)
Structural Health Monitoring Payload for the MISSE Platform on the International Space Station
2025: Research poster, NMSU-URS

Payload Design for Guided Wave Structural Health Monitoring in the ISS
2025: **Conference Paper, ASEE Gulf-Southwest**

Robotic Opportunities for Rural Communities. DOI: 10.18260/1-2–55076.
2025: **Research poster, NMT-SRS**

CubeSat Frame Development.
2024: **Research poster, NMT-SRS**

Validation of FBG Strain Sensors and their Use for Pipe Monitoring.

Other Work Experience

Teaching Assistant   **2023-2025**
Mechanical Engineering Dept., NMT   *Socorro, NM*
– Prepared lab exercises, graded assignments, and supported course delivery.

Outreach Tutor   **2022–2024**
Mechanical Engineering Dept., NMT   *Socorro, NM*
– Led 3 robotics workshops for professionals in New Mexico, and mentored students from four high schools.
– Designed educational materials for robotics and Machine Learning instruction.

Tutor   **2022**
Immigrant and Refugee Resource Village   *Albuquerque, NM*
– Tutored 40+ students in English and math, improving literacy scores.

Skills

Coding: MATLAB, Python, LabVIEW, Arduino, C++, Latex

Machine Learning: Keras, TensorFlow, Image Processing

CAD/Circuit Design: SolidWorks, Inventor, Generative Fusion360, KiCad, Onshape

Design Analysis: ANSYS, COMSOL, Modal and Thermal analysis

Manufacturing: PCB design, Machining, Milling, 3D printing

Leadership: Design Team Lead, Project Mentor, English and Spanish

Leadership & Activities

Co-Founder & Vice President: ASME NMT Chapter

Founder & President: NMT Basketball Club

Member: SAE international NMT chapter

Volunteer: MESA NM (STEM outreach)

Awards & Scholarships

2025–2026: NM AMP Undergraduate Research Scholar Award, NMSU – $2,500 research support.

2023–2024: Sophomore Research Scholarship, NMT – $5,000 research support.

2023-2025: Tau Beta Pi Engineering Honor Society invitation, Declined

2022: Burger King Scholars – $1,000 tuition award.

2022–Present: NMT Gold Scholar – $5,000/year tuition scholarship for academic honors.