

📍 Huntsville, AL ✉ mattan.tseng@gmail.com ☎ 630-254-6410 🌐 mattantseng-0.github.io

Education

The University of Alabama in Huntsville (UAH) (Expected) 2024 – 2025
- M.S.E Electrical Engineering — GPA: 4.00/4.00

Iowa State University (ISU) 2020 – 2023
- B.S. Mechanical Engineering — GPA: 3.97/4.00

Experience

Graduate Research Assistant Huntsville, AL
Nonlinear and Complex Systems Lab (NACS-Lab) 2024 - present

- Machine Learning and Data-Driven Modeling:
 - Wrote custom Python code for reservoir computing and sparse identification of nonlinear dynamics
 - Used machine learning methods to model and simulate chaotic systems
- Fiber Amplifier Laser Enhancement:
 - Performed preliminary research applying data-driven modeling methods to semiconductor diodes
 - Automated data collection process for phase modulation experiments of single mode fiber lasers
- Radar Waveform Design:
 - Wrote C++ blocks to calculate and display radar ambiguity surface for software defined radio (GNU Radio)

AI/Autonomy: Machine Learning Engineering Intern Poway, CA
General Atomics Aeronautical Systems inc.(GA-ASI) Summer 2023

- Training Environment Enhancement:
 - Developed deterministic controller to improve and diversify adversarial behavior
 - Utilized controller to begin benchmarking of reinforcement learning agent
- Development Research:
 - Performed stack tracing to discover and highlight problems in communication backend
 - Began preliminary literature search to expand knowledge base in state-of-the-art robustness methods

Undergraduate Research Assistant Ames, IA
Virtual Reality Applications Center (VRAC) 2020 - 2023

- Mixed Reality Demonstration Applications:
 - Developed Arduino system to transmit real-time sensor feedback to Oculus Quest running Unity application
 - Designed and built passive haptic feedback system for mixed reality application
 - Stood up Unity project for immersive carrier application for cave automatic virtual environment
- Department of Transportation Snowplow Navigation:
 - Developed an Android-Unity application to guide snowplow drivers in adverse weather
- Extended Reality Visual Acuity Toolkit:
 - Developed an application (XRAE) to allow users to customize UI to meet their visual acuity needs

Weekend Lighting Assistant Barrington, IL
Willow Creek Community Church 2019 - 2021

Publications

“SINDy and Lorenz-Like Equations” Mattan Tseng, Aubrey Beal (Submitted) May. 2025

“Enhanced suppression of stimulated Brillouin scattering (SBS) in high energy fiber lasers through novel chaotic phase modulation” Daniel Matyas, Mattan Tseng, Zachary C Helton, Christopher N Vincent, Aubrey Beal (Accepted) Apr. 2025

“XRAE: Extended Reality Acuity Examination” Mattan Tseng, Jack Miller, Dante Goldner, Eliot Winer, <https://doi.org/10.1016/j.softx.2023.101429> Jul. 2023

Skills

Languages: Python, MATLAB, C#, C++
Technologies: git, Unity Game Engine, Docker, SolidWorks, Fusion 360, Adobe Illustrator