Isabel Moore

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EDUCATION

Texas A&M University
Master of Science in Computer Engineering, Focus on Robotics/Autonomy — Aug 2024 - May 2026
Bachelor of Science in Mechanical Engineering — Aug 2019 - May 2024

EXPERIENCE

Texas A&M Engineering Experiment Station (TEES), Texas A&M — Aug 2024 - Present
Graduate Researcher

- Engineer remote control and monitoring systems to facilitate cross-operation between Texas A&M and UMich's Mcity track, integrating cloud infrastructure with AWS and CARLA simulation.
- Integrate a decision interface that enables users to draw waypoints for autonomous vehicle navigation and provides real-time alerts on unconventional but necessary maneuvers.

Bush Combat Development Complex, Texas A&M — May 2024 - Present
Graduate Researcher | Air-Ground Cooperative Autonomy Team & Resilient, Real-time Networking Team

- Develop Kalman algorithms to enhance vehicle trajectory estimation and sensor resilience in mixed fleets.
- Integrate drive control policies using Soft Actor-Critic (SAC) and Dubins paths in a meta-reinforcement learning project for Jackal robots, enhancing differential drive and adaptability.

Connected Autonomous Safe Technologies (CAST) Laboratory, Texas A&M — Sep 2023 - May 2024
Undergraduate Researcher

- Designed and validated of recovery algorithms in countering GPS spoofing attacks for advancement of GPS security and autonomous vehicle technology.
- Authored undergraduate thesis as part of Texas A&M LAUNCH Undergraduate Research Scholars Program.
- Publication acceptance into Explorations: Texas A&M Undergraduate Journal, College Station, TX, 2024.

Southwest Research Institute, San Antonio, TX — May 2023 - Aug 2023
Fellow for UTSR Gas Turbine Industrial Fellowship Program

- Redesigned a microturbine for a hybrid/electric UAV fuel system, aligning CFD analysis with physical test results from the previous year to enhance design accuracy.
- Utilized combustor pressure distribution and fuel system analytics to propose future design modifications.

IT Security Operations, Texas A&M — Jan 2023 - May 2023
Cybersecurity Student Analyst

- Monitor and analyze security alerts and logs to identify and respond to potential security incidents.
- Conduct security assessments and vulnerability scans on university systems to identify potential security risks and develop mitigation strategies.

PROJECTS

Meta Reinforcement-Learning based Contextual Adaptive-Control — Sep 2024 - Present

- Hybrid control approach that combines adaptive control with meta-learning, applied to dynamic non-linear systems, across simulations and real-world applications to enhance training model reliability.

Mcity 2.0: NSF-Funded Next-Generation Autonomous Vehicle Testing — Aug 2024 - Present

- Integrate AWS and CARLA environments for real-time, cloud-based autonomous vehicle testing, including integration of real-time telemetry and diagnostic tools using Redis for enhanced vehicle trial analysis at Mcity.

US Army Moving Object Trajectory Estimation (MOTE) — May 2024 - Present

- Cooperative autonomy by real-time sharing of obstacle and trajectory data between aerial and ground vehicles, optimizing navigation and mission execution in off-road environments.

GM-SAE AutoDrive Challenge™ II | Vehicle Dynamics & CANBUS — Aug 2023 - Jun 2024

- Served as Team Lead and Technical Analysis Lead for a senior design autonomous car competition, sponsored by General Motors and SAE International.
- Focused on optimizing the lateral controller settings, enhancing vehicle stability and maneuverability by 70%.

PUBLICATIONS

- Using Sensor-Health-Aware Resilient Fusion for Localization in Presence of GPS Spoofing Attacks. IEEE International Conference on Cyber Security and Resilience (CSR), London, UK, 2024.

PROFESSIONAL SKILLS

- **Software:** ANSYS Fluent, SolidWorks, AutoCAD, ROS, RViz, Linux, Fusion360, Docker
- **Programming Languages:** Python, C++, LabVIEW, MATLAB/Simulink, Git