Angelina S. Ibarra

PhD Student · Computer Engineering
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Research Interests

Machine Learning, Deep Learning, Computer Vision, Underwater Imagery and Technology

Education

Texas A&M University — *College Station, TX*
PhD in Computer Engineering — *Aug. 2025 - May 2029*

- Advisor: Dr. Joshua Peeples

Texas A&M University — *College Station, TX*
M.S. in Computer Engineering — *Aug. 2023 - May 2025*

The University of Texas at Austin — *Austin, TX*
B.S. in Electrical Engineering — *Aug. 2019 - May 2023*

- Certificate in Marine Science

Experience

Texas A&M University Advanced Vision and Learning Lab — *College Station, TX*
Graduate Research Assistant — *Mar. 2024 - Present*

- Evaluate state-of-the-art self-supervised computer vision models and provide a benchmark for object detection in synthetic aperture radar (SAR) imagery
- Developed a new approach for improved anomaly detection in SAR imagery through more robust anomaly scores
- Disseminated results of research through publications, presentations, and reports to sponsors

Georgia Tech Research Institute — *Atlanta, GA*
GEM Fellow Research Intern — *May 2025 - Aug. 2025*

- Programmed software to interface with a frequency counter, record frequency measurements over time, and produce Allan Variance measurements and plots
- Measured the frequency stability of various clocks and oscillators in the lab
- Created a remote server using the Labscript suite to allow multiple machines to interface with a wavemeter

Oceaneering — *Hanover, MD*
Software Engineering Intern — *May 2024 - Aug. 2024*

- Evaluated various message brokers to be used for communication between containerized C# applications
- Created cookiecutter templates to automate the creation of the software needed to containerize C# applications and integrated Serilog to provide logging for microservices in a Kubernetes cluster

Applied Research Laboratories — *Austin, TX*
Student Technician — *Jan. 2022 - Apr. 2023*

- Studied schematics and PCBs for transponders to be used on an underwater autonomous vehicle (UAV)
- Interfaced said transponder to a new microcontroller to be used on the hardware stack for the UAV

The University of Texas at Austin Intelligent Environments Laboratory — *Austin, TX*
Undergraduate Research Assistant — *May 2021 - May 2022*

- Designed a PCB and the circuitry for various air quality sensors for an indoor air quality monitoring system
- Developed software to visualize the collected sensor data such as CO2, oxygen, and temperature over the course of several weeks and in various environments

Publications

Conference Proceedings

- **A. Ibarra** and J. Peeples, "Patch distribution modeling framework adaptive cosine estimator (PaDiM-ACE) for anomaly detection and localization in synthetic aperture radar imagery," in *Algorithms for Synthetic Aperture Radar Imagery XXXII*, 13456-4, SPIE,2025, doi: 10.1117/12.3052541.
- L. Chauvin, S. Gupta, **A. Ibarra**, and J. Peeples, "Benchmarking suite for synthetic aperture radar imagery anomaly detection (SARIAD) algorithms," in *Algorithms for Synthetic Aperture Radar Imagery XXXII*, 13456-3, SPIE,2025, doi: 10.1117/12.3052519.

Journal Articles

- H. Fritz, S. Bastami, C. Lin, K. Nweye, T. To, L. Chen, D. Le, **A. Ibarra**, W. Zhang, J. Park, W. Waites, M. Tang, P. Misztal, A. Novoselac, E. Thomaz, K. Kinney, Z. Nagy, "Design, fabrication, and calibration of the Building EnVironment and Occupancy (BEVO) Beacon: A rapidly-deployable and affordable indoor environmental quality monitor," in *Building and Environment*, Vol. 222, 2022, 109432, ISSN 0360-1323, doi: 10.1016/j.buildenv.2022.109432.

Presentations

Oral Presentations

- "Patch distribution modeling framework adaptive cosine estimator (PaDiM-ACE) for anomaly detection and localization in synthetic aperture radar imagery," in *Algorithms for Synthetic Aperture Radar Imagery XXXII*, International Society for Optics and Photonics (SPIE), Orlando, FL, April 2025.

Poster Presentations

- "SAR-SSL: A Comprehensive Benchmark for Self-Supervised Object Detection in Synthetic Aperture Radar Imagery," in *Texas A&M University ECE Fall Graduate Poster Event*, College Station, TX, November 2025.
- "Patch distribution modeling framework adaptive cosine estimator (PaDiM-ACE) for anomaly detection and localization in synthetic aperture radar imagery," in *Algorithms for Synthetic Aperture Radar Imagery XXXII*, International Society for Optics and Photonics (SPIE), Orlando, FL, April 2025.

Awards & Activities

2025-pres. **GEM Fellowship Recipient,** Sponsored by Texas A&M University and Georgia Tech Research Institute — *College Station, TX*

2022-23 **President,** Kappa Delta Chi Sorority Inc. — *Austin, TX*