

Trung Tien Dong

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EDUCATION

University of South Florida

PhD in Electrical and Computer Engineering

Aug. 2026 – present

Tampa, FL

University of South Florida

B.S. in Computer Science, Minor in Mathematics

Sept. 2022 – May 2026

Tampa, FL

RESEARCH INTERESTS

- **3D Computer Vision:** Point Cloud Perception, Open Set Perception, Temporal Prediction
- **Multimodal Perception:** LiDAR Camera Fusion, Sonar Vision Fusion, Robust Sensor Fusion
- **Robust AI for Robotics:** Perception under Corruptions, Domain Shift Robustness, Reliable Real World Deployment
- **Embodied and Autonomous Systems:** Underwater Robotics, Autonomous Vehicles, Embodied Intelligence

TECHNICAL SKILLS

- **Programming:** Python, C/C++, MATLAB, MySQL, JavaScript
- **ML / DL:** PyTorch, TensorFlow, scikit-learn, XGBoost, CUDA
- **Computer Vision:** OpenCV, Kornia, Roboflow
- **Tools & SDKs:** Ouster SDK, Vimba SDK, Foxglove, Kvaser CANlib, ROS2, Lanelet2, STAHLE TrackDriver, JOSM, CARLA

PUBLICATIONS

Journal Papers

Holland, J., **Dong, T.**, Katkoori, S., Sargolzaei, A. (awaiting submission). *Adversarial Testing and Verification of Traffic Sign Recognition Algorithms in Connected Autonomous Vehicles.*

Conference Papers

Dong, T., Thakkar, D., Sargolzaei, A., Lin, X. (under review). *Post Fusion Bird's Eye View Feature Stabilization for Robust Multimodal 3D Detection.* Submitted to **IEEE EEE/RSJ International Conference on Intelligent Robots & Systems (IROS) 2026**, Pittsburgh, PA, United States.

Holland, J., **Dong, T.**, Sargolzaei, A. (2026, Mar. 13–15). *A Reinforcement Learning Framework for Infrastructure-Driven Verification of Traffic Sign Visibility in Autonomous Vehicle Environments.* In **IEEE SoutheastCon 2026**, Huntsville, AL, United States.

Dong, T., Holland, J., Sargolzaei, A. (2025, Mar. 22–30). *Traffic Signs Recognition for Connected and Autonomous Vehicles: A Survey of Threats and Defenses.* In **IEEE SoutheastCon 2025**, Charlotte/Concord, NC, United States.

Nguyen, Q., Le, T., **Dong, T.**, Vo, T., Setty, A. (2024, May. 18–21). *Smart IoT System for Longitudinal Real-time Physiological Monitoring of Cancer Patients Undergoing Treatment.* In **IISE Annual Conference & Expo 2024**, Montreal, Canada.

Conference Posters

Dong, T., Vo, T., Nguyen, Q., Le, T. (2024, Mar. 1). *Smart IoT Device for Physiological Monitoring of Cancer Patients Undergoing Treatment.* In **USF Health 2024**, Tampa, FL, United States.

RESEARCH EXPERIENCE

3D Gait Recognition

Aug. 2025 – Dec. 2025

USF

Supervisor: Dr. Mauricio Segundo

- Review literature on Gait Recognition.
- Implemented baseline gait recognition model for benchmark.
- Developed a novel modeling sequence for gait recognition through background context using panoptic segmentation.

L4 Autonomous Bus and Digital Twin

Sept. 2023 – Dec. 2025

Pinellas Suncoast Transit Authority, RANCS Research Lab

Supervisor: Dr. Arman Sargolzaei

- Constructed a high-fidelity digital twin of the bus yard from LiDAR data, producing a Lanelet2 vector map and implementing an interactive simulation environment in CARLA.
- Simulate and test autonomous bus operations in a controlled virtual environment, including the deployment of basic autonomous navigation capabilities.
- Collaborated with industry partners to integrate a robo-driver for conducting Vehicle-in-the-Loop (VIL) co-simulation tests, ensuring seamless motion planning and control within the digital twin.

Deep Learning Fingerprint Matching

Aug. 2024 — Dec. 2024

USF

Supervisors: Dr. Mauricio Segundo, Dr. Yu Sun

- Implement a Transformer-based fingerprint matching architecture.
- Developed a novel matching method for Transformer-based architecture in PyTorch for fingerprint matching using Hungarian algorithm.

SunTrax Florida DOT Freeway CAV Deployment

May. 2023 – Aug 2024

Florida Department of Transportation, RANCS Research Lab

Supervisor: Dr. Arman Sargolzaei

- Assist in the deployment of cooperative autonomous vehicle systems for freeway driving at SunTrax.
- Led software development for vehicle platooning demonstrations, managing data collection and analysis.
- Designed control algorithms to enable safe, coordinated freeway merging and lane-keeping maneuvers.

K-12 Educator Workshop

Jul. 2023 – Dec. 2025

RANCS Research Lab

Supervisor: Dr. Arman Sargolzaei

- Created and delivered a curriculum on autonomous vehicle technologies for 6 educators.
- Focused on foundational CAV topics: RADAR, LIDAR, computer vision, and CAN protocols.
- Engaged educators in hands-on activities, enhancing their understanding of autonomous vehicle operations and sensor systems. Students successfully deployed pedestrian detection models onto a vehicle.

WORK EXPERIENCE

Graduate Research Assistant

Jan. 2026 – Present

ERA Research Lab

Tampa, FL

- Conduct research in 3D computer vision and multi-modal perception for underwater robotics and autonomous systems.
- Design and develop multi-modal perception pipelines that fuse camera and 3D sonar data for detection and scene understanding
- Develop and support perception pipelines for BlueROV robot using 2D and 3D sonar data.

Undergraduate Research Assistant

Oct. 2023 – Dec. 2025

RANCS Research Lab

Tampa, FL

- Spearheaded the development and maintenance the perception software of a fleet of two connected and autonomous vehicles, integrating advanced sensor fusion systems and computer vision platforms. Continuously improve programmatic vehicle perception to support cutting-edge research and ensure successful delivery of project milestones for government and industry contracts.
- Executed contract deliverables by implementing research solutions, conducting stakeholder meetings, and ensuring alignment with project goals for private entities and government agencies, including the Florida Department of Transportation to deploy a freeway platooning field experiment, the Pinellas Suncoast Transit Authority to deploy an autonomous bus system with a high-resolution digital twin for testing and COAST Autonomous to integrate and test their autonomous driving stack.

- Conduct reinforcement learning research to design and implement testing and verification frameworks using noisy traffic signs, ensuring rigorous validation of autonomous vehicle systems.
- Reviewed literature on Traffic Sign Detection algorithms against adversarial attacks.

Data Acquisition Engineer

Sept. 2023 – Jun. 2024

Bulls Racing – USF Society of Automotive Engineers

Tampa, FL

- Perform post-session data cleaning and analysis.
- Oversee drafting of testing procedures and assist in data analysis and visualization on track during testing sessions.

Software Development Intern

May 2023 – Aug. 2023

FPT Software

Hanoi, VN

- Collaborated with 5 other engineers to create an object detection model that detects and records the amount of anomalies in a printed image using a fine tuned **YOLOv5**.
- Processed and annotated **25000 images** for training and testing dataset.
- Developed a multi-class classification model that aids in organizing anomalies in printed images using TensorFlow.
- Achieved a **96%** F1 score on the fine tuned YOLOv5 model.

AWARDS

- **Dean's List** — 4.0 Semester GPA

Fall 2022, Spring 2023, Spring 2024, Summer 2025