# Tianyuan(Alex) Du

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## Education

**Duke University**, 2024/08 to now
Ph.D. in Electrical and Computer Engineering
GPA: 3.9/4.0
Research Interest: Mobile Computing, Augmented Reality, Robotics, Human-Computer Interaction
Courses: Edge Computing, Generative Models, Computer Engineering for Neural Networks.

**University of Michigan, Ann Arbor**, 2024/05
Bachelor of Science in Computer Science, with minor in Statistics
GPA: 3.7/4.0

## Skills

**Programming Languages**: C++, C#, C, MATLAB, Python, Java, Javascript, R, SQL
**Technical Expertise**: Unity, Wireless Systems, Machine Learning, Computer Vision, Signal Processing.
**Languages**: Chinese(Native), English(Fluent)

## Experience

**Research Assistant**, 2024/08 to now
I3T Lab, Duke University, US
Advised by Professor Maria Gorlatova, working on latency-aware multi-party systems for localization and mapping that enables human-robot collaboration with Augmented Reality (AR) technology.

**Research Assistant**, 2022/05 to 2024/04
Interactive Sensing & Computing Lab, University of Michigan, Ann Arbor, US
Advised by Professor Alanson Sample and graduate student Yang-Hsi Su, leaded research on a novel system for indoor sensing with Bluetooth Low Energy antenna array. Conceptualized and implemented a custom two-dimensional Angle of Arrival measurement algorithm that improved prior work. Proposed and implemented a depth estimation pipeline based on machine learning, creating a 3-dimensional localization pipeline. Designed experiments to evaluate its performances. First author paper accepted.

**Teaching Assistant**, 2024/01 to 2024/04, 2025/08 to 2025/12
EECS 367 (Autonomous Robotics), University of Michigan, Ann Arbor, US
ECE 653 (Human-Centric Computing), Duke University, US

**Engineer Intern**, 2021/06 to 2021/08
Applied Science & Technology Research Institute, Hong Kong S.A.R.
Worked in the Communication Division of Network Software Group, focusing on automated-driving vehicles. Developed a system for automatic parking and end-to-end automatic camera calibration.

## Publications

T. Hu, **T. Du**, Z. Qu, and M. Gorlatova, "XR Reality Check: What Commercial Devices Deliver for Spatial Tracking," IEEE International Symposium on Mixed and Augmented Reality (ISMAR), 2025. [Paper]

**T. Du**, Y. Su, and A. Sample, "2D+Depth RF Localization via a Low-Cost Receiver," IEEE Wireless Communications and Networking Conference (WCNC), 2024, Dubai, UAE. [Paper]

T. Kang, A.-D. Dinh, B. Wang, **T. Du**, Y. Chen, K. Chau, "Optimization of a Real-Time Wavelet-Based Algorithm for Improving Speech Intelligibility," arXiv:2202.02545 [cs.SD], 2022. [Paper]

## Projects

**Multi-Player XR System for Parkinson's Rehabilitation.** Collaborated with Nokia Bell Labs, Columbia University, and the University of Southern California to design and implement rehabilitation games and the network infrastructure supporting multi-player extended reality experiences.

**Latency-Aware Multi-Party SLAM for HRI in AR.** Design and implemented system for multiple human users and robots to perform tracking and mapping collaboratively in real-time.

## Awards and Honors

**First-Year Ph.D. Student Fellowship** 2024
Awarded by Duke University.

**Jame B. Angels Scholar** 2024
Awarded by the University of Michigan, Ann Arbor for consecutive outstanding academic records.

**University Honors** 2022 to 2023
Awarded by the University of Michigan, Ann Arbor for academic excellence.

**Dean's List** 2021
Awarded by the HKUST for academic excellence.

**Scholarship Scheme for Continuing Undergraduate Student** 2021
Awarded by HKUST for recognition and honor of outstanding academic performance (top 10% of all continuing undergraduates).