Tianyuan(Alex) Du

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Education

Duke University, 2024/08 to now
Ph.D. in Electrical and Computer Engineering
Research Interest: Mobile Computing, Augmented Reality, Robotics, Human-Computer Interaction
Courses: Computer Network, 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

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).