Lisong Codey Sun

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EDUCATION

Stanford University May 2026
Master of Science, Electrical Engineering GPA: TBD
The University of Texas at Austin May 2024
Bachelor of Science, Electrical and Computer Engineering **GPA: 4.00**

Relevant Coursework: Adv. Computer Vision, Computer Graphics, Operating Systems, Embedded Systems, Computer Architecture, Aerial Robotics, Statistical Estimation Theory, Algorithms and Data Structures

EXPERIENCE

UT Visual Informatics Group, *Undergraduate Research Assistant* | *Python, CUDA* Aug 2023 – May 2024
- Published a real-world multi-modal SLAM algorithm using 3D Gaussian splatting to create photorealistic maps
- Achieved **3x** reduction in tracking error and **5%** increase in image quality over state-of-the-art 3DGS SLAM

Amazon, *Software Development Engineering Intern* | *C, Python* May 2023 – Aug 2023
- Developed embedded C reference firmware to demo FreeRTOS with MQTT & TLS libraries to 6 vendors
- Wrote Python scripts to automatically provision **800,000+** devices to AWS IoT and accelerate manufacturing

UT Radionavigation Lab, *Undergraduate Research Assistant* | *C++, Python* Aug 2022 – May 2023
- Published a bundle adjustment SLAM algorithm for XR in OpenCV, coupled with GNSS and IMU for **cm accuracy**
- Analyzed 6G bandwidth requirements for collaborative mapping and cloud offloading of bundle adjustment

Amazon, *Software Development Engineering Intern* | *C, Java* May 2022 – Aug 2022
- Developed the hardware abstraction layer for an automated Wi-Fi setup feature affecting **38 million** devices
- Upleveled application, framework, and driver code from FireOS 6 (Android Nougat) to FireOS 7 (Android Pie)

PUBLICATIONS

MM3DGS SLAM: Multi-modal 3D Gaussian Splatting for SLAM Using Vision, Depth, and Inertial Measurements. L. C. Sun, N. P. Bhatt, J. C. Liu, Z. Fan, Z. Wang, T. E. Humphreys, U. Topcu. *IEEE/RSJ IROS 2024* ***Oral Pitch Finalist***.

Robust Absolute Headset Tracking for Extended Reality. R. M. Tenny, L. C. Sun, A. Duru and T. E. Humphreys. *IEEE/ION PLANS 2023*.

PROJECTS

Stylized Dynamic NeRFs | *Python* Jan 2023 – Apr 2023
- Implemented neural radiance fields with deformation networks that capture time-varying dynamics in scenes
- Architectured PyTorch training to apply VGG style features onto the NeRF for view and time-consistent style

Autonomous Drone, Aerial Robotics | *C++* Jan 2022 – May 2022
- Developed a C++ path-planning algo for autonomous drones using A*, path pruning, and map discretization
- Tuned computer vision to allow the drone to identify balloon locations in the midst of noise using RANSAC

HUDset | *C* Aug 2021 – Dec 2021
- Architectured software and mechanical design of Augmented Reality headset that imposes a heads-up display
- Developed C drivers for IMU and temperature-humidity sensor; designed stereoscopic optics for a 3D display

SKILLS

Technical/Software Skills: OpenCV, PyTorch, CAD, PCB design, Git, Linux, ROS, CUDA, Docker, OpenGL, AWS
Programming Languages: C/C++, Python, MATLAB, Java, Verilog, Assembly, LabVIEW, TypeScript