

Codey Sun

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EDUCATION

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

Relevant Coursework: 3D/4D Foundation Models, Computer Vision, Computer Graphics, Animation & Simulation, Operating Systems, Embedded Systems, Computer Architecture, Statistical Estimation, Algorithms

EXPERIENCE

Stanford Gradient Spaces Lab, Research Assistant <i>PyTorch, 3D GenAI</i>	Sept 2024 – Present
<ul style="list-style-type: none">Developed a locally-controlled 3D asset generation model using ControlNet and multi-view image diffusionEmbedded open-vocabulary language features into 3D scenes for part-level segmentation and editing	
Visual Informatics Group @ UT Austin, Undergraduate Researcher <i>PyTorch, CUDA</i>	Aug 2023 – Aug 2024
<ul style="list-style-type: none">Published a real-world multi-modal SLAM algorithm using 3D Gaussian splatting to create photorealistic mapsAchieved 3x reduction in tracking error and 5% increase in image quality over state-of-the-art 3DGS SLAM	
Amazon, Software Development Engineering Intern <i>C, Python</i>	May 2023 – Aug 2023
<ul style="list-style-type: none">Developed embedded C reference firmware to demo FreeRTOS with MQTT & TLS libraries to 6 vendorsWrote Python scripts to automatically provision 800,000+ devices to AWS IoT and accelerate manufacturing	
UT Austin Radionavigation Lab, Undergraduate Researcher <i>C++, Python, OpenCV</i>	Aug 2022 – May 2023
<ul style="list-style-type: none">Published a bundle adjustment SLAM algorithm for AR/VR in OpenCV, coupling GNSS and IMU for cm accuracyAnalyzed 6G bandwidth requirements for collaborative mapping and cloud offloading of bundle adjustment	
Amazon, Software Development Engineering Intern <i>C, Java</i>	May 2022 – Aug 2022
<ul style="list-style-type: none">Developed the hardware abstraction layer for an automated Wi-Fi setup feature affecting 38 million devicesUplevelled application, framework, and driver code from FireOS 6 (Android Nougat) to FireOS 7 (Android Pie)	

PROJECTS

Minecraft with Rigid Body Physics Simulation <i>TypeScript, OpenGL</i>	Jan 2024 – May 2024
<ul style="list-style-type: none">Recreated Minecraft with procedural world generation, Perlin noise shaders, and portals using OpenGLDeveloped Verlet integration library to implement 3D rigid body physics simulation for an interactive world	
Stylized Dynamic NeRFs <i>Python, PyTorch</i>	Jan 2023 – Apr 2023
<ul style="list-style-type: none">Implemented neural radiance fields with deformation networks that capture time-varying dynamics in scenesArchitected PyTorch training to apply VGG style features onto the NeRF for view and time-consistent style	
Autonomous Drone, Aerial Robotics <i>C++, OpenCV</i>	Jan 2022 – May 2022
<ul style="list-style-type: none">Developed a path-planning algorithm for autonomous drones using A*, path pruning, and map discretizationTuned computer vision to allow the drone to identify balloon locations in the midst of noise using RANSAC	
HUDset <i>Embedded Lab Competition Winner</i> <i>C</i>	Aug 2021 – Dec 2021
<ul style="list-style-type: none">Architected software and mechanical design of Augmented Reality headset that imposes a heads-up displayDeveloped C drivers for IMU and temperature-humidity sensor; designed stereoscopic optics for a 3D display	

SKILLS

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