




MINH TRAM

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EDUCATION

Master's of Science in Computer Science

Expected May 2022

Coursework: Artificial Intelligence, Neural Networks, Machine Learning

Current GPA: 4.00

Research Thesis: Interactive AR to Robot Interface

University of Texas at Arlington - Arlington, TX

Bachelor of Science in Computer Science

Aug 2017 - June 2020

Coursework: Algorithms, Operating Systems, Artificial Intelligence, Robotics

GPA: 3.58

University of Texas at Arlington - Arlington, TX

PROJECTS

IROS 2020 OCRTOC

Open Cloud Robot Table Organization Challenge

- Utilized NVIDIA DOPE to detect physical objects for robot arm detection and organization tasks
- Eliminated hardware integration by simulating hardware characteristics using ROS and Gazebo 9 simulator
- Created unified development environment to eliminate software discrepancies by creating a Docker image

REAL-TIME VR-2-ROBOT HEAD

Interactive human-to-robot vision

- Designed 3-axis head motion simulator to drive mounted stereo camera for user's head motion tracking
- Reduced hardware-software lag time by 40% by packing sensor data through Serial-to-USB asynchronously
- Implemented vision and sensor based homing sequence to synchronize robot and human pilot head
- Utilized ZED, Unity, and Oculus SDK to stream live video feed for real-time pilot headset visualization

MINI LINUX

Minimal Working Example UNIX simulator

- Implemented bash-like CLI for command handling to provide an effective, interactive command interface
- Incorporated persistent FAT32 file system for permanent data storage through file system virtualization
- Added multithreading functionality to allow parallel and background software execution by using fork()
- Ensured safe thread handling to prevent resource hog and deadlocks by utilizing semaphores and scheduling

EXPERIENCE

Graduate Research Assistant

Aug 2020 - Present

Active research in robotics and interactive AR pose estimation fusion

- Implemented OpenCV, PyTorch, Intel RealSense for objects detection and pose estimation on Jetson Nano
- Reduced model training time by porting development environment to higher-end machines using Docker
- Created synthetic training data for object pose detection using Unreal Engine 4 and NVIDIA's NDDS
- Trained object detection model from 3D stereolithography files for IROS 2020 OCRTOC competition

TECHNICAL SKILLS

Proficient: Python, ROS, CUDA, L^AT_EX, git, Docker || **Familiar:** C++, Java, PyTorch, Tensorflow, Unity

Hardware: NVIDIA Jetson, Universal Robot UR5e, Oculus VR, Intel RealSense, Zed Stereo Camera