Hashim Hameed

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WORK EXPERIENCE

Researcher | UNLV Drones and Autonomous Systems Lab *Las Vegas, NV* | *Nov 2023 – Present*

- Created autonomous vision-based detection and manipulation scripting for two 20-DOF humanoid robots, increasing stability by 32% compared to single actor manipulation
- Constructed PID based path-planning for UAV payload delivery, lowering trajectory error by 6% through experimentally determined constant values
- Transmitted geolocation data to UAV through developed Flutter SDK and Google API based application stack, reducing delivery time by 11%
- Utilized ROS motion capture data for 2.4 GHz data transmission to mobile robot platform for movement toward target, improving relative angle calculation by 1.13 factor compared to vision-based alternative
- Built microcontroller-based game console controller emulator for autonomous mobile robot operation by recreating communication protocol, reducing latency by 6.3% compared to wireless alternative
- Reduced waste through collaboration on subtractive manufacturing designs, cognisant of available financial and material resources, and formulated 17 designs prior to finalization

Computer Repair Technician | Duke of Computers *Las Vegas, NV | July 2023 – Jan 2024*

- Repaired PCBs following multimeter-based diagnostics to find shorts, permitting further use of 7 devices
- Decreased diagnosis period by 18% following development of systematic troubleshooting methodology

EDUCATION

University of Nevada Las Vegas **Dec 2026**
Bachelor of Science, Electrical Engineering

PUBLICATIONS

[1] H. Hameed and P. Oh, "Collaborative Rigid Body Manipulation Toward Heterogeneous Humanoids," 2026 IEEE 16th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV, USA, 2026

PROJECTS

Embedded System Development

- Generated compare-timer-based PWM signal for DC motor control, with custom GUI permitting user to input speed of 30-130 RPM via USART message and plot both input and encoder-based speed values over time
- Produced ADC and temperature monitoring application with 0.5s latency via BLE and 2.4 GHz communication
- Displayed ultrasonic-based distance values on array of 4 7-segment displays via shift register manipulation, with servo-mounted sensor sweeping 120º field as dictated by generated PWM signal
- Interfaced I2C display to show orientation values of 6-DOF IMU, plotting relevant transmitted USART data

Electronic Design & Development

- Drafted and built audio effect circuit, manipulating AC waveform through clipping following sequential unity gain of 26.5dB and achieving distorted output with variable characteristics therein
- Fabricated Schmitt trigger inverter based drone synthesizer, with control of 4 distinct audio characteristics via variable RC circuit values

TECHNICAL SKILLS

Languages - C++, C#, Python, Java
Software - LTspice, KiCAD, MATLAB, Quartus II, Fusion 360
Frameworks - Robot Operating System (ROS), Issac Gym, Flutter
Hardware - Jetson SBCs, Arduino, Raspberry Pi, TI MSP432 & CC135Rx