Basil Dissi

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EDUCATION

Georgia Institute of Technology   Expected January 2027
  M.S. in Computer Science
  GPA: 4.0 | Magna Sum Laude

North Carolina State University   May 2021
  B.S. in Biomedical Engineering
  GPA: 3.69 | Magna Cuma Laude

SKILLS & CERTIFICATIONS

Languages: C++, Python, Java, MATLAB, Bash

Systems & Networking: Linux, QNX (RTOS), POSIX threads, shared memory, sockets, real-time systems, DDS (RTI)

Developer Tools & Platforms: Git, Gitlab CI, Conan, CMake, LLVM

Data & Analysis: Pandas, NumPy, SciPy

EXPERIENCE

Product Development Engineer (Software Focused) | Asensus Surgical   January 2022 – Present

- Designed and implemented C++ applications deployed in a real-time (QNX) environment to simulate surgeon motion commands for automated testing of robotic controllers. Used company wide and became a corner stone of SW V&V.
- Built ROS2/DDS-based real-time messaging pipelines enabling synchronized data exchange between simulated environments and physical robotic subsystems
- Developed a motion-capture server to synchronize recorded trajectories with robotic controllers at 1 ms temporal resolution and ~100 μm positional accuracy
- Implemented software tooling to support integration, calibration, and validation of next-generation force/torque sensors
- Led cross-functional engineering efforts to integrate four 3 mm laparoscopic instruments into a production robotic surgical system, coordinating software, controls, quality, and regulatory stakeholders
- Partnered with manufacturing, regulatory, and quality teams to redesign test strategies, eliminating ~6 months of testing and reducing costs by $120K+
- Overhauled internal V&V tracking workflows while developing and executing verification strategies for a next-generation robotic system with 400+ system requirements

Research and Development Engineer Intern | **Asensus Surgical – Senhance Project**   August 2021 – December 2021

- Supported software, electrical, and mechanical verification activities for a Class II robotic surgical system
- Performed root-cause analysis on system-level failures and presented data-driven recommendations to engineering teams
- Authored and executed verification protocols across hardware/software boundaries in a regulated development environment

PROJECTS

Distributed File System/gRPC Service

- Designed and implemented a distributed file system using gRPC, supporting concurrent clients and remote procedure calls
- Implemented consistency mechanisms and synchronization primitives to ensure correctness under concurrent access
- Evaluated performance tradeoffs and failure behavior under varying workloads and network conditions

Multicore Cache Coherence Analysis & Performance Modeling

- Modified a cycle-accurate multicore simulator to classify cache misses into compulsory, replacement, and coherence categories
- Analyzed performance scaling and IPC degradation across 1–16 core configurations
- Identified coherence traffic and synchronization overhead as primary contributors to diminishing parallel efficiency