Kelly Interiano

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EDUCATION

Bucknell University – BS in Computer Engineering and Minor in Physics — Expected May 2026
GPA: 3.47

EXPERIENCE

North Atlantic Industries — **Bohemia, NY**
Intern-Software Engineer — May 2025 - Present

- Designed and implemented an automated hardware testing framework for embedded motherboards, enabling reproducible, low-level validation of peripherals such as GPIO pins, specifically TTL channels, on an FPGA connected via SPI
- Documented a modular command-line interface (CLI) application for direct hardware interaction, supporting future extensibility to additional motherboards and peripheral types, and standardizing test procedures
- Ported a standalone C hardware testing program to a flexible C++ class structure, integrating it into the CLI application framework for streamlined execution and improved maintainability
- Built a Jenkins CI/CD pipeline with a Linux agent to remotely execute system commands and custom testing applications, automating low-level hardware validation in VxWorks and reducing manual testing time by 94%
- Leveraged embedded systems and DevOps tools, including VxWorks RTOS, Docker for containerized build environments, CMake for cross-platform builds, and Jenkins pipeline, to accelerate development cycles and enhance system maintainability

Bucknell University College of Engineering — **Bucknell University**
Engineering 100 Teaching Assistant — Aug 2023 - Present

- Collaborated and assisted with Bucknell faculty to revitalize the Engineering Design Curriculum, incorporating customized teaching strategies that significantly enhanced student engagement by 20%, as measured by course evaluations and surveys
- Supported first-year students by administering office hours and grading assignments with an emphasis on constructive feedback, resulting in a 10% improvement in average student grades

Bucknell University College of Engineering — **Bucknell University**
Research Assistant in Engineering EXCELerator Program — June 2022 – Aug 2022

- Created immersive experiences for the Oculus VR headset using Unity, C#, and the Oculus Integration package
- Executed comprehensive testing of Oculus Unity applications by configuring project settings for dual displays and VR compatibility, testing with five users, and engaging in feedback sessions
- Contributed to advancements in Bucknell's VR Program by developing and implementing new educational VR prototypes, leading to a 25% increase in student engagement in VR-related courses and funding for future programs

PROJECTS

Quantum Dot Energy Spectra Simulation

- Modeled 1D quantum dot energy transitions under oscillating electric fields using Time-Dependent Perturbation Theory and Fermi's Golden Rule
- Designed an interactive Python-based GUI that allows users to vary dot size and visualize quantum confinement effects through simulated emission/absorption spectra, bridging theoretical quantum mechanics with computational modeling

Brain Tumor Classification

- Built and trained a Convolutional Neural Network (MobileNet V2) on 253 MRI brain scans, achieving 96% classification accuracy and an AUC of 0.96 on the validation set for tumor detection
- Implemented an optimized end-to-end Python ML pipeline using TensorFlow, OpenCV, and scikit-learn for data preprocessing, model training, and evaluation
- Leveraged techniques such as data augmentation, dropout, and class weighting to mitigate dataset imbalance, resulting in a lightweight model optimized for accessible CPU inference on limited hardware

SKILLS

Languages: C, Python, Java, Assembly (Cortex-M and RISC-V), HTML/CSS, MATLAB
Development Tools: Git, GitLab/GitHub, Visual Studio Code, Jenkins, Docker, Multisim, Claude Code
Hardware: Oscilloscope, Multimeter, Soldering, Circuit Testing, 3D Printing, Laser Cutting