KEVIN KELLY

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EDUCATION

The University of Texas at Austin   Aug. 2019 to May 2023
Bachelor of Science in Electrical Engineering, Emphasis in Software Engineering and Design   *Austin, TX*
- Applied software engineering and design principles to embedded systems, hardware design, and computer engineering projects.

PROJECTS

Formal Circuit Verification Algorithm
Sponsored by Cadence Design Systems Inc.
- Built a C++ tool with Tarjan's SCC to detect cycle risk in RTL and ASIC netlists, enabling formal verification.
- Benchmarked alternatives and removed runtime bottlenecks, improving scalability in timing-critical netlists.

Website Data Management and Deployment
Software Keystone
- Led full-stack deployment of a project management platform with React, Node.js, MongoDB, Heroku, Python, and SQL.
- Built authenticated REST APIs for secure, efficient data flow across distributed components, reducing user friction.
- Designed database schemas and backend logic for high-volume transactions, preventing data loss and contention.

ARM Based USB Game Controller
Hardware Keystone
- Designed and brought up an ARM Cortex-M USB controller with dual joysticks and 12 buttons, from schematic to PCB, demonstrating SoC integration, embedded systems design, and hardware–software debugging.
- Wrote embedded C with memory-mapped I/O for deterministic control and seamless hardware–software integration.
- Validated USB HID via iterative bring up and targeted debug, yielding stable, repeatable behavior.

Real Time Facial Expression Recognition
Digital Image Processing and Machine Learning
- Built a real time Python and OpenCV pipeline with Haar cascades to classify emotions in live video.
- Linked detections to smart home triggers via IoT, demonstrating end-to-end computer vision to device control.

Unraid Home Server Deployment
Personal Project
- Built and maintain an Unraid server with Dockerized microservices and CI/CD pipelines for media, automation, and monitoring.
- Configured parity-protected arrays and backups to safeguard data and speed recovery, applying system administration, virtualization, VLAN, and VPN best practices.
- Improved security and performance with DNS caching, reverse proxies (NGINX/Traefik), and VPN tunneling.
- Maintain Linux VMs and containers to practice orchestration and resource isolation.

Professional Portfolio Website
Personal Project
- Built and maintain a responsive, mobile-friendly portfolio highlighting projects and experience.
- Implemented CSS grid and flex layouts, plus dark mode for usability.
- Integrated OpenGraph and Twitter meta tags with SEO keywords to improve discoverability and sharing.
- Hosted on a custom domain with HTTPS for secure, dependable access.

EXPERIENCE

Audio Video Assistant, Operator, Supervisor   Sep 2019 to Aug 2023
The University of Texas at Austin   *Austin, TX*
- Directed a 15+ technician team and trained hires on complex AV systems, networking, and real-time event operations, reducing errors in large-scale university events.
- Served as liaison for clients, performers, and university leadership, turning requirements into clear runbooks under pressure.
- Resolved technical and logistical issues in real time to ensure continuity and client success.

TECHNICAL SKILLS

Programming: Python, Java, C, C++, C#, JavaScript, SQL, Lua, ARM Assembly, x86 Assembly, HTML5/CSS
Hardware / Systems: Verilog, RTL (Register Transfer Level) Design, Digital Logic, Formal Verification, PCB Design, Embedded Systems, SoC (System-on-Chip) Integration, System Architecture, Linux, Operating Systems, Docker, Virtualization, VLAN, VPN
Frameworks / Tools: React.js, Node.js, REST APIs, OAuth, OpenCV, IoT, AWS, Git, MongoDB, PostgreSQL, Redis, CI/CD Pipelines, Unit Testing (JUnit, PyTest), Selenium, Reverse Proxies (NGINX/Traefik), TCP/IP, DNS, DHCP, RTSP, HTTP/HTTPS, SSL/TLS Certificates, Firewalls