

Joe Jaison T

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EDUCATION

Electrical Engineering and Computing Technology

University of Ottawa, Ottawa, Ontario, Canada

Clubs and societies: uORocketry, uOFPGA

September 2023 – Present (expected 2028)

Computer Systems Technician - Networking

Centennial College, Toronto, Ontario, Canada.

Clubs and societies: Toastmasters International

September 2019 – April 2021

SUMMARY OF SKILLS

Embedded Systems & Hardware Design

- Designed and optimized circuit schematics, BOMs, and multilayer PCB layouts using Altium Designer and KiCad.
- Manufactured custom PCBs with SMD and through-hole components using advanced soldering techniques (hot air rework, precision iron soldering).
- Programmed microcontrollers in Rust and C/C++, via JTAG using Segger Jlink.
- Experienced with STM32CubeIDE for development, as well as workflows using probe-rs and OpenOCD in Arch Linux environments.
- Extensive experience with STM32 (ST) and ATSAME51 (Atmel) series microcontrollers.

Electronics Testing & Validation

- Performed functional and continuity testing on custom PCBs using multimeters, oscilloscopes, and analyzers.
- Validated signal integrity and electrical performance of high-speed traces in multilayer designs.
- Conducted circuit simulations using LTSpice for pre-layout analysis and troubleshooting.
- Performed electromagnetic interference (EMI) checks and field analysis using ANSYS tools to ensure compliance with design standards.

Avionics & Leadership

- Leading the Avionics Hardware Sub-team at uORocketry, University of Ottawa—managing development cycles, mentoring team members, and ensuring flight system readiness.
- Familiar with Agile methodologies and SCRUM frameworks for managing collaborative engineering projects.
- Experienced in setting timelines, tracking progress, and managing tasks with tools like Planner and Trello.
- Documented technical specifications, design procedures, and test results for internal reviews and compliance.
- Ensured adherence to aerospace safety standards in hardware design and manufacturing.
- Proficient with Arduino, Raspberry Pi, and headless SBCs for prototyping and deployment.

Networking & Telecommunications

- Designed network infrastructure and configured enterprise-grade FTP, DNS, and DHCP servers.
- Delivered technical support as a Field Technician at Bell, troubleshooting fiber, DSL, and home phone networks.
- Hands-on experience with fiber splicing and low-voltage systems including DSL, Ethernet, and PON.
- Simulated complex network environments using Cisco Packet Tracer.
- Trained in CCNA networking concepts including VLANs, subnetting, routing protocols, and network security, with practical experience configuring routers and switches in simulated environments.
- Managed over five GSM/4G/5G telecom projects, focusing on compliance and operational efficiency.

Cybersecurity & Monitoring

- Applied cybersecurity principles in lab-based distributed systems using network firewalls and penetration testing tools.
- Proficient with Wireshark, Nmap, Aircrack-ng, and Metasploit for traffic analysis and vulnerability assessment.

Software Development & Programming

- Skilled in Java, Python, GoLang, Rust, C/C++, Scheme, Prolog, Kotlin, and Verilog.
- Developed web applications using HTML, CSS, TypeScript, and Flask.
- Experienced in Git, GitHub Actions, and automation for CI/CD pipelines.
- Proficient in command-line tools and system administration on both Windows and Linux platforms.

Productivity and Documentation

- Proficient with Microsoft Office Suite including Word, Excel, PowerPoint, Power Bi and Outlook for documentation, data analysis, reporting, and presentations.

- Experienced in using Excel for data auditing, pivot tables, and basic automation with formulas and macros.
- Comfortable with digital collaboration tools such as OneDrive, Teams, and SharePoint for file management and team communication.

Tools & Other Technical Proficiencies

- Conducted FPGA development and simulation using Altera Cyclone IV, with Verilog and Block Diagram Files (BDF).
- Competent with SolidWorks and TinkerCAD for 3D design and modeling.
- Completed CCNA and CompTIA A+ training, strengthening foundational networking and hardware knowledge.
- Familiar with user and access management in enterprise Windows/Linux environments.

Soft Skills & Communication

- Developed strong public speaking and presentation skills through Toastmasters International, delivering and receiving feedback on technical talks and impromptu speeches.
- Effective team collaborator and project communicator, experienced in cross-functional coordination and technical leadership.

Astronomy

- Strong understanding of celestial navigation, and sky observation.
- Skilled in operating and calibrating equatorial telescope mounts for precision alignment and observation.

PROJECTS

University of Ottawa, Ottawa, ON

January 2024 – April 2024

GNG 1103, Accelerated Erosion Testing Device Project with Canadian Nuclear Laboratories – Grade B+

<https://makerepo.com/JoeJ/1969.gng-1103-f3-acclerated-erosion-testing-device>

- Engineered a precision mechanical testing apparatus to replicate and accelerate the effects of water erosion on structural materials, supporting R&D for Canadian Nuclear Laboratories.
- Integrated IoT-enabled sensors and motorized controls with microcontroller-based systems, enabling real-time data acquisition and automated process monitoring.
- Utilized SolidWorks and rapid prototyping techniques to design and fabricate custom 3D-printed (additive manufacturing) enclosures and mechanical assemblies, optimizing for durability and fit.
- Maintained comprehensive documentation of design iterations, testing protocols, and component decisions using a collaborative version-controlled repository (MakeRepo).
- Applied Agile project management methodologies, coordinating task schedules, milestones, and risk assessments using Microsoft tools and Trello board to meet tight academic and industry timelines.

Centennial College, Toronto, ON

January 2021 – April 2021

Technician Project – Grade A+

- Networking Equipment Setup: Worked in a team to establish a robust and fully functional network environment by configuring routers, switches, and access points, ensuring high reliability and seamless performance.
- Server Configuration: Played a critical role in setting up and configuring servers for various functionalities, including FTP, DNS, HTTP/S, and DHCP, meeting project specifications.
- Network Topology Design: Contributed to designing a logical and efficient network topology to support optimal functionality and scalability using Cisco Packet Tracer for simulation and validation.
- Security Measures Implementation: Implemented network security measures, including configuring firewalls, applying access control protocols to safeguard data, and preventing unauthorized access.
- Communication Interfaces: Configured and tested communication ports (COM ports), VLAN, Ethernet and Wi-Fi for device connectivity and network communication.
- Team Collaboration: Leveraged strong team coordination to complete project deliverables efficiently, demonstrating effective communication and collaboration.

Centennial College, Toronto, ON

January 2020 – April 2020

ICET Workshop – Grade A

- Computer and Accessory Repair: Repaired and configured computers and accessories per appointment, maintaining meticulous documentation.
- School Equipment Servicing: Collaborated with a team to service and repair school equipment, ensuring functionality and minimizing downtime.
 - Guided Problem-Solving: Addressed technical issues with precision and efficiency, applying guidance and strategies from professors to prevent component damage.
- Proficiency in Ticketing Systems: Utilized internal ticketing systems to track and manage repair tasks, ensuring timely resolution and clear communication.
- Preventative Maintenance: Conducted routine system checks and cleaning to prevent overheating, software failure, and hardware degradation.
- Customer Interaction: Provided status updates to users and demonstrated post-repair functionality, ensuring satisfaction and usability.

WORK HISTORY

uORocketry – University of Ottawa's Rocketry Club, Ottawa, ON

September 2023 - Present

Electrical Engineer

- Proficiency in Altium Designer and KiCad: Designed and reviewed circuit schematics, generated BOM, PCB layouts, and routing to ensure optimal performance.
- Aerospace-Grade Component Selection: Conducted thorough research on DigiKey and Mouser to select high-quality components and materials for PCB manufacturing, ensuring compliance with industry standards and safety requirements.
- PCB Manufacturing: Manufactured PCBs using surface-mount (SMD) and through-hole components, employing tools such as a heat gun and soldering iron.
- Microcontroller Programming: Programmed and flashed onboard microcontrollers using Rust and Jlink probe with JTAG, ensuring system functionality.
- Leadership: Appointed as Avionics Hardware Sub-Team Lead, overseeing the design, development, and implementation of avionics systems while mentoring over five team members and ensuring project milestones were achieved.
- Cross-Team Collaboration: Coordinated with other sub teams to gather and integrate design requirements and restrictions, ensuring compatibility and seamless implementation across all systems.

Yupana Inc, Toronto, ON

June 2022 – August 2023

Site Technician/Auditor

- Base Band Unit Integration: Integrated Ericsson base band units and radios in cell sites for 4G/5G networks, following precise installation guidelines.
- Compliance and Supervision: Followed directions from site supervisors and adhered to company guidelines during telecommunication unit installations.
- Project Management: Managed GSM/4G/5G network projects, coordinating tasks, schedules, and resources to ensure successful deployment and operation.
- Data Auditing and processing: Recorded, reviewed, and interpreted audit data using Excel and Power Bi, to evaluate operational effectiveness and compliance.
- Special Projects: Managed additional duties and special projects to ensure efficient business operations and regulatory compliance.

Bell Canada, Toronto, ON

August 2021 – May 2022

Field Service Technician (Structured Cabling) - BTS

- Network Infrastructure Maintenance: Worked on network infrastructure, including Pure Fiber Internet, home phones, and DSL.
- Technical Support: Repaired, installed, and troubleshoot network devices and infrastructure using proprietary software.
- Fiber Splicing and Verification: Spliced and verified fiber connections to ensure seamless connectivity and high-quality performance.
- Riser Technician Training: Trained as a riser technician, proficient in working at heights and handling fiber backbones.
- Technical Assistance: Assisted fellow technicians with technical difficulties and roadblocks, ensuring project success.
- Customer Service: Provided exceptional service to customers through positive communication, professional appearance, and conduct.
- Brand Representation: Actively supported the Bell brand by highlighting its benefits to customers, enhancing their satisfaction and loyalty.

CDI Technologies, Markham, ON

May 2020 – June 2020

Computer Technician

- System Repair and Configuration: Diagnosed, repaired, and configured computers for clients, ensuring that both hardware and software components met performance standards.
- Efficiency in Order Fulfillment: Consistently achieved daily targets for system repairs and configurations, ensuring timely project completion and delivery to clients.
- Team Collaboration: Partnered with over ten technicians and non-technical staff to enhance team efficiency, contributing to faster project completion and improved customer satisfaction.
- Proficiency with Tools: Utilized hand tools (e.g., screwdrivers, pliers) and power tools (e.g., drills, heat guns) to efficiently service, repair, and configure computers and hardware.
- Technical Expertise: Gained practical experience with a range of hardware and software tools, for system configuration.