Neel Patel

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Education

Carleton University – B.Eng in Computer Systems Engineering, Co-op   Sept 2021 – Apr 2026
- Dean's Honour List (2022, 2025)

Experience

Software Developer Student Co-op | Solace – Ottawa, ON   Winter 2024, Fall 2024, Summer 2025
- Streamlined SVN to Git migration, cutting the process from a multi-week process to a single-day process
- Architected, implemented, and tested a new feature for the Solace Messaging API for C, preventing erroneous API states and saving bandwidth usage across multiple Solace messaging APIs
- Designed and unit tested a feature for the Solace Python API, enabling users to send compressed messages
- Led the migration and open-source release of the Wireshark SMF Plugin, improving community initiatives
- Built a workflow using GitHub Actions that creates plugin releases, reducing all friction through automation
- Won an internal hackathon by designing a dynamic AI system to help navigate documentation

Full-Stack Developer Co-op | LearnExperts – Ottawa, ON   Summer 2024
- Set up GitHub Actions workflow to automate tests and generate reports, increasing visibility of bugs
- Implemented AWS RUM with custom metadata for error logs, leading to improved bug tracking
- Developed end-to-end Cypress tests for key interactive workflows, reducing manual test requirements by 40%

Jr. Test Analyst Co-op | Immigration, Refugees, and Citizenship Canada – Ottawa, ON   Summer 2023
- Verified manual test cases for government applications used by >10 000 employees, ensuring reliability
- Collaborated with IT and development teams to document test procedures, improving traceability
- Contributed to the CI/CD pipeline by creating and maintaining test scripts, enabling higher software quality

Jr. Software Developer, High School Co-op | NorthStar Utilities – Ottawa, ON   Winter 2020
- Developed a Java utility that parsed, standardized, and cleaned customer .properties files, automating document cleanup and eliminating manual editing
- Leveraged Git, Docker, and agile methodology, gaining early experience in developer practices

Projects

- **Wallpaper Theme Converter:** JavaScript website that changes the colour scheme of wallpapers, with 130+ stars on GitHub
- **Ross Video FPGA Challenge:** Designed a SystemVerilog and Python system to simulate GIF rendering via a custom ROM for the FPGA, winning team
- **AI Capstone Project:** Architected a multi-agent RAG system to analyze complex queries using City of Ottawa's Asset Management documents and resources
- **AI Raspberry Pi Bamboo Plant:** Engineered an IoT monitoring system using LLaMA to monitor water levels and generate personalized voice alerts
- **Nintendo DS Business Card:** Developed a bare-metal C application for the Nintendo DS with custom graphics

Skills

Languages: Python, Java, C, C++, ARM Assembly, Verilog, BASH, HTML, CSS, JavaScript
Project Management: Git, SVN, Jira, Confluence
Hardware/Embedded: Vivado, FPGA, Raspberry Pi, Arduino
Other Tools: GitHub Actions, Jenkins, Roo/Cline, RAG, ADK, Wireshark, Testing Frameworks, GDB