RAPHAËL ONANA
SOFTWARE ENGINEERING

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EXPERIENCE

CATERPILLAR *Jan 2025 − Apr 2025*
Caterpillar Inc. - *Software Designer Intern* *Montreal, Canada*

- Led the migration of CI/CD pipelines from Azure DevOps Server Pipelines to GitHub Actions by creating a detailed migration plan to support the company's transition to GitHub Enterprise. Working closely with the Team lead to identify requirements, write user stories, and ensure alignment with organizational goals.
- Optimized Build pipeline by implementing toolchain and dependency caching, reducing workflow runtime by 62%.
- Strengthened debugging and problem-solving skills by actively participating in troubleshooting sessions, digging into Make/CMake build files and writing Bash scripts to identify build and runtime issues in autonomous drilling systems
- Integrated the GitHub Actions Importer into existing workflows, achieving up to 80% accuracy in pipeline translation. Documented the entire migration journey, identifying and addressing key challenges

Ford *May 2024 − Dec 2024*
Ford Motor Company - *Test Automation Engineer Intern* *Ottawa, Canada*

- Automated weekly manual token update process for stations using Python and Jenkins, reducing task time by 90%. Developed a pipeline to streamline logging into nodes, processing device data, and generating JSON files, significantly improving efficiency and saving hours of work
- Demonstrated leadership by mentoring a new intern, helping acclimate to the team's workflows and tools. Provided guidance on using test automation tools, debugging processes, managing test executions, and effective lab management
- Gained practical experience with several automotive and electronic hardware such as Sync Infotainment, Telematics hardware, Arduino, breakout and relay boards, while setting up and maintaining test stations that simulated in-vehicle environments, using command-line tools to manage and debug software, networking issues with ethernet, vlans, as well as hardware-related issues, and utilizing defect tracking systems to log, monitor, and resolve failures
- Developed a Python script using Pandas and NumPy to automate weekly station failure reports, automating 100% of manual Excel data processing, optimizing data analysis, and providing graph plots for further insights

Projects

FoodBank Ai – Hackathon uOttawa | *Python, Flask, Pytorch, Numpy, Postgresql, React* *Ottawa | Sep. 2024*

- Led the front-end development of FoodBank Ai, a gamified web app encouraging food donations, using React and Bootstrap, ensuring an engaging and user-friendly experience
- Refined and optimized API data with python before transmitting it to the backend, ensuring precise nutritional value calculations and accurate point allocation for user donations. Manually Trained an AI model on this data, achieving approximately 75% accuracy in recognizing fruits presented to the camera

Carleton University Webring | cu-webring.org *Ottawa | Jan 2025*

- Collaborated in the creation of Carleton Webring, a platform for Carleton University students and alumni to showcase their personal websites and portfolios, enhancing visibility and networking opportunities
- Contributed to developing the frontend and maintaining the website with HTML/CSS and Javascript, ensuring user experience and accessibility for the university community.

EDUCATION

CARLETON UNIVERSITY *Sep 22 − Present*
B.S Computer Science Honors, AI/ML Stream & Maths *Ottawa, ON*

Certification (in progress) : Data Science, Machine Learning Specialization *Feb 25 − Present*

Relevant Coursework

- Data Structures and Algorithms
- Object Oriented Prog.
- Systems Programming
- Software Engineering
- Web development
- Calculus, Statistics 3
- Discrete Mathematics

Technical Skills

Programming Languages: Python, Typescript, Javascript, Java, C, C++, HTML5/CSS
Developer Tools: Git, GitHub, Azure DevOps, Jenkins, GitHub Actions, Docker, Putty, Grafana, Linux, bash, Jira
Frameworks: Pandas, NumPy, NextJs, React, NodeJs, MongoDB, SQL, Tailwind, Bootstrap, AWS Cloud Practitioner
Languages: English, French