

James Nitsch

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EXPERIENCE

German Aerospace Center

September 2024 – December 2024

Software Engineer Intern

Stuttgart, Germany

- Engineered an interface with C++ and Node-RED for a mobile hydrogen charging station, providing emergency power to support 1,000 personnel during the European Union 'Magnitude' earthquake exercise
- Analyzed an innovative hydrogen reactor design with Python and MATLAB and documented findings in a research paper shared with the train manufacturer Talgo, resulting in a 20% improvement in hydrogen train efficiency
- Migrated railway cooling capacity web tool to a shared platform and enhanced security and convenience by integrating Keycloak, providing seamless access for 10,000 researchers

German Aerospace Center

January 2024 – April 2024

Software Engineer Intern

Stuttgart, Germany

- Developed a Python/React web tool to streamline cooling capacity calculations for railway vehicle research, incorporating data visualization to simplify analysis of the results
- Facilitated communication with trains operating through Berlin using OpenVPN, allowing critical logging data to be transmitted with a 40% latency reduction
- Created a model to showcase EV charging solutions at the Hannover Messe 2024 trade fair to 150,000 attendees
- Processed data from 100+ sensors in the Vienna RTA Climatic Wind Tunnel using Python and SQL, simulating extreme weather conditions to generate and prepare datasets for hydrogen train design optimization

Toronto District School Board

May 2023 – August 2023

Security, Risk and Audit Administrator

Toronto, Canada

- Conducted Cyber Risk Assessments to identify and mitigate security and privacy risks of online services, ensuring TDSB staff and students were safeguarded from potential cyber incidents
- Performed quality assurance testing of a new ServiceNow GRC implementation, reducing manual email correspondence by 90%
- Ensured adherence to security frameworks (NIST, ISO 27001, etc.), reinforcing consistent security protocols
- Utilized pivot tables and other Microsoft Excel tools to create visualizations of Cyber Risk Assessment data, providing valuable insights for school board-wide security posture analysis

Ed's House Hospice - Community Care Northumberland

May 2021 – August 2022

Maintenance Technician

Cobourg, Canada

- Supported healthcare staff in delivering compassionate patient care by ensuring a clean and safe environment
- Maintained and enhanced the outdoor property through landscaping and regular upkeep, creating a pleasant and welcoming environment for patients and visitors

TECHNICAL SKILLS

Languages: Python, C/C++, SQL, JavaScript, MATLAB, R

Frameworks: Node.js, Flask, React

Developer Tools: Git, Docker, Postman, Keycloak, Valgrind, GDB

Libraries: Matplotlib, pandas, NumPy, SciPy

PROJECTS

RAIINet | C++

October 2023 – December 2023

- Improved object-oriented programming skills by contributing to the development of a turn-based strategy game

Personal Finance Tracker | Python, JavaScript

December 2024 – January 2025

- Created a web tool for tracking financial transactions, allowing users to input the price and category of their transaction, store data, and view a total value

EDUCATION

University of Waterloo

September 2022 – April 2027

Candidate for Bachelor of Computer Science

Waterloo, Canada

- Cumulative Average: 88%
- Computer Science Representative for Math Endowment Funding Council
- Recipient of the Douglas T. Wright Award, recognizing the pursuit of a meaningful international work term