

Daniel R. Bumaguin

danielrb.me

EDUCATION

Bachelor of Science in Computer Science, Minor in Criminology

Wilfrid Laurier University

Relevant Coursework: Digital Electronics, Databases, Data Structures, Object-Oriented Programming

Present

Waterloo, ON

EXPERIENCE

AI-Cloud Optimization Research Assistant

January 2026 - April 2026

Wilfrid Laurier University

- Reduced SLA violations by 91% by designing a hybrid predictive autoscaler with a tuned Random Forest model, cutting violations from 83 to 7 compared with traditional threshold-based reactive scaling.
- Integrated PyCaret AutoML in Python to train, benchmark, and evaluate 18 regression algorithms for forecasting workloads.
- Engineered Python data pipelines to ingest, clean, and normalize production telemetry from the Alibaba Cluster Trace (2018) for model training and analysis.
- Applied cloud optimization, telemetry analysis, and workload forecasting methods to support autoscaling decisions for production systems.

Game Design Intern

November 2025 - January 2026

Project Win Foundation

- Modified an existing game in GoDot and GDScript to create an educational version focused on sustaining the environment.
- Created new art assets in Photoshop and modified existing assets with AI to produce new in-game items.
- Adapted gameplay content and assets to support an educational game experience.

Object-Detection Research Assistant

May 2025 - August 2025

Wilfrid Laurier University

- Helped develop a real-time pedestrian detection system for video surveillance applications.
- Used Python with OpenCV, PyTorch, and YOLO to analyze and visualize computer vision data.
- Collaborated with a team to analyze data and present findings.

PROJECTS

Pedestrian Detection A.I. 🛡️ | *Python, Flask, YOLO, OpenCV, Telegram API*

- Developed a Flask-based GUI application for real-time person detection using a YOLO object detection model for industrial factory surveillance and configurable outdoor deployment.
- Implemented a multi-threaded architecture to handle multiple camera feeds simultaneously.
- Integrated the Telegram API to send mobile notifications when personnel are detected in restricted areas.

StudyBuds 🛡️ | *React, Firebase, MySQL, JavaScript*

- Developed a full-stack web platform that connects students with compatible study partners.
- Implemented a smart calendar for study plans and a matchmaking system that pairs students based on courses and interests, while integrating secure authentication and role-based access control.
- Followed the Unified Process with object-oriented analysis and design, incremental builds, and test-driven development.

Chaos - Dead By Daylight 🛡️ | *Python, Discord API, Flask, SQLite, Steam API*

- Developed a web application to track and display competitive Dead By Daylight player statistics.
- Automated daily leaderboard updates by integrating the Discord API to pull competitive data from a select server and present it in a user-friendly format.
- Integrated the Steam API for user authentication and player statistics, supported by a SQLite database for leaderboard rankings and player roles, and used Crontab for asynchronous tasks with reverse proxies and SSL encryption.

RELEVANT SKILLS

Concepts: Backend Development, Software Engineering, Automation, Microservices, Networks

Languages: Python, SQL (SQLite), JavaScript, C, HTML, CSS, R

Developer Tools: Git, VSCode, PyCharm, Eclipse, GoDot

Frameworks & Libraries: Flask, React, OpenCV, PyTorch, YOLO, PyCaret