

# CONNOR LILBOURNE

[HIDDEN] | cscottlil03@gmail.com | 519-732-7768 | linkedin.com/in/connor-lilbourne | github.com/CLilbourne

## EDUCATION, LANGUGES AND SKILLS

**Wilfrid Laurier University** – Waterloo, ON *September 2021 – April 2025*  
Honours Bachelor of Science (Computer Science) with Mathematics and Environmental Studies Minors  
Languages: C, C#, Python, VBA, SQL Variants, DAX, PowerBI and Java  
Skills: Agile Software Development, Blender, CAD, AWS Cloud Practitioner, Database Management, PowerBI

## WORK EXPERIENCE

**Data Analyst – LifeLearn Animal Health, ProSites, Guelph, Ontario** *June 2024 – December 2024*

- Applied Machine Learning/AI Recognition to profile customers improving the companies understanding on product usage across the customer base.
- Designed and implemented a convolutional neural network to analyze web traffic trends and identify bot data within Google Analytics and Matomo.
- Developed Power BI dashboards with integrated distribution models based on company needs and real-life trends, providing actionable insights and supporting data-driven recommendations.

**Logistics Coordinator – HawkHacks/Konfer, Waterloo, Ontario** *Sept 2023 – May 2024*

- Supported one of Canada's largest hackathons, with 900+ participants, 35+ sponsors, 30+ speakers, and \$240k in combined cash and object prizes.
- Collaborated with the team to identify event requirements and manage logistics, including venue booking, catering, and food competitions ensuring smooth planning, implementation, and high-quality participant experience.
- Built and maintained relationships with external vendors to secure cost-effective, high-quality services for event execution.

**Instructional Assistant– Wilfrid Laurier University, Waterloo, Ontario** *January 2024 – April 2024*

- Conducting lab sessions, answering student questions, and providing additional support to help students grasp complex concepts in the CP216 Introduction to Microprocessors course.
- Assisting in the grading process for labs by providing constructive feedback to aid academic development and collaborating with the Professor in a professional manner.

**Emergency Instructor - Brant Haldimand Norfolk Catholic School Board, Brantford, Ontario** *May 2022 – June 2022*

- Short term temporary contract.
- Managed elementary school classes by teaching lessons based on curriculum standards to support continuous learning.
- Analyzed student achievement and prepared lesson plans to optimize student progress while maintaining accurate performance records.

**Inclusion Specialist and Senior Counsellor - YMCA Wanakita, Haliburton, Ontario** *June 2021 – August 2022*

- Provided care and companionship for special needs campers by leading activities, assisting with mealtime, and aiding with hygiene routines.
- Applied Agile thinking principles to adapt to challenges on various wilderness out trips by testing new canoeing routes and keeping track of previous mapping errors.
- Utilized problem-solving skills by becoming familiar with specific needs of campers to adjust services to support campers.

## PROJECTS

### Data Mining Projects (Data Analysis/Data Cleaning/Big Data)

*Languages and Frameworks: Python, Jupyter Notebook, Scikit-Learn, TensorFlow, NetworkX, Keras... etc*

- BERT/LLM's, Tokenization, Stop Word Removal/Data Cleaning, Similarity Models, Pagerank.
- Developed a custom PageRank algorithm to evaluate the relative importance of web pages within a network, effectively addressing issues such as dead ends and spider traps.
- Designed and implemented a Large Language Model to analyze similarities between scientific paper titles and abstracts, enabling the clustering of research into thematic groups and revealing potential interdisciplinary opportunities for innovation.

### Machine Learning Algorithms (Data Analysis/Data Cleaning)

*Languages and Frameworks: Python, Jupyter Notebook, Scikit-Learn, TensorFlow, Keras*

- K-NN, Linear Regressor, Neural Networks (Convolutional), Decision Tree Classification.
- Engineered machine learning models leveraging the MNIST Database as well as the Scikit-Learn library to classify authentic and fraudulent spam emails. Developed algorithms for digit recognition in images with a 98% accuracy.

### **AI Algorithms (Puzzle Solving / Solution Based)**

*Languages and Frameworks: Python, Jupyter Notebook, C Programming*

- Built an A\* algorithm for solving the 8/15-puzzle's by conducting a comparative analysis of heuristics.
- Created an AC-3 (Arc Consistency) algorithm built with backtracking to solve any 9x9 sudoku puzzle.
- Produced a N-Queens Constraint Satisfaction Problem Algorithm that can find the greatest number of queens to fill a 2 million x 2 million chess board so that they will not be able to attack each other based on classic chess rules.

### **Database Management System**

*Languages and Frameworks: SQL, MySQL Workbench, Java*

- Developed a Database Management System using primary key, foreign key relationships in MySQL Workbench based on an initial ER diagram while reducing redundancy and increasing optimization of the system using normalization techniques.

### **Block Cube Computer Game**

*Languages and Frameworks: Unity, C#, Visual Studio Code, Blender, Github*

- Outlined a project plan for a runner style game by considering stakeholder requirements, developing UML diagrams and Gantt charts to remain organized and dealing with merge conflicts.
- Outlined a project plan by developing UML diagrams while evaluating prototypes by implementing user feedback, developing test suites, and debugging errors to optimize performance and ensure stakeholder requirements are met.

### **AWS Hosted E-Commerce Website**

*Languages and Frameworks: AWS EC2, WordPress*

- Initialized an EC2 instance using Free Tier Services on the AWS Platform combined with a WordPress AML.
- Created an E-Commerce website for a Business "Blackridge Camping Company" on WordPress while leveraging UX Design principles, SEO, and digital/content marketing trends.