

CONNOR USATY

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Education

McMaster University

Sep. 2021 - Present

Bachelor of Computer Engineering, Minor in Statistics

Hamilton, Ontario

- **Golden Key Distinction (Top 15%)** - CGPA: 3.8/4.0
- **Relevant Coursework:** Algorithm Design & Analysis, Data Structures & Algorithms, Software Development, Principles of Programming, Microprocessor Systems, Advanced Probability & Random Processes, Engineering Economics

Work Experience

MHI RJ Aviation

May 2024 - Present

Business Intelligence Analyst

Mississauga, Ontario

- Led the development of a suite of Batch and Python scripts that utilize Tkinter, Polars, and xlswriter to automate a large daily data extraction and processing pipeline, resulting in a **73% reduction in runtime**.
- Developed a web application in Python that utilizes Dash, Plotly, Polars, and Tailwind to process and dynamically visualize sales and backlog data from an SQL database for a multi-million dollar warehouse relocation project.
- Fine-tuned a time series sales forecasting model using XGBoost in Python resulting in an **18% lower RMSE**.
- Utilized PowerBI to process and display sales data resulting in automatically-refreshing, maintenance-free dashboards.

Edge Group

May 2022 - Aug. 2022

Assistant Project Coordinator

Vaughan, Ontario

- Utilized project management tools such as Excel and SharePoint to develop and share official site documentation.

Projects

AI Sudoku Solver (TensorFlow, Keras, OpenCV, Python) | [GitHub](#)

- Fine-tuned the CNN model architecture and generated a custom dataset that more accurately represented sudoku squares resulting in **99.96% validation accuracy** and **0.13% validation loss** on a 213,000 image dataset.
- Developed a data generation script to generate a training dataset that resembled sudoku squares better than MNIST.
- Utilized OpenCV and NumPy to preprocess the images, locate the sudoku, and extract the 81 sudoku squares.

Pathfinding Algorithm Visualizer (React.JS, JavaScript, Tailwind) | [Website](#) | [GitHub](#)

- Developed an interactive visualization tool for common pathfinding algorithms using the React.JS framework.
- Implemented visual examples for A* Search, Dijkstra's, Breadth-First Search, and Depth-First Search algorithms.

3D Spatial Mapping Embedded System (Open3D, Python, C) | [Report](#) | [GitHub](#)

- Utilized I2C serial communication to send API calls and receive precise measurement data from a ToF LiDAR sensor.
- Developed a Python script that utilizes PySerial and Open3D to receive, process, and visualize measurement data from the microcontroller resulting in an accurate 3D reconstruction of the scanned area.

Extracurricular

McMaster Artificial Intelligence Society

May 2024 - Present

President

McMaster University

- Selected by the previous Co-Presidents and MacAI Executive Team to lead the organization.

McMaster Artificial Intelligence Society

Sep. 2023 - Apr. 2024

Director of Education

McMaster University

- Led the Education Team comprised of 7 undergrad and 2 graduate students.
- Spearheaded the development and presentation of AI/ML workshops to educate students on a variety of topics and technologies such as supervised learning, neural networks, computer vision, TensorFlow, Keras, sklearn, and Pandas.
- Developed CNN and neural network demos in Jupyter Notebook using TensorFlow, Keras, sklearn, and matplotlib to further attendees understanding of concepts such as data preprocessing, model validation, and model fine-tuning.

Technical Skills

Languages: Python, MySQL, C++, C, Java, JavaScript, HTML, CSS

Libraries: Polars, Pandas, NumPy, TensorFlow, Keras, sklearn, Dash, React.JS, Tailwind

Other: Git, GitHub, Azure, Jupyter Notebook, VS Code, PowerBI, Excel