# Charles Reed

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Github link | LinkedIn link

## EDUCATION

**York University**                                                                                          Toronto, ON
*Honors Bachelor of Arts, Computer Science.*                                          *Expected Graduation 2025*

## TECHNICAL SKILLS

- **Programming Languages**: Python, Java, HTML
- **Libraries and Frameworks**: Numpy, OpenCV, Beautiful Soup, win32
- **Tools and Applicable Theories**: Visual Studio Code, Android Studio, Github, Computer vision, Automation, Mobile development, Image processing, Data analysis, git.

## PERSONAL PROJECTS

- **Video Game Automator** *2021*

  Automation OCR software tasked with recognizing specific elements on a computer screen and providing pre-programmed responses automatically.
  - Used an iterative algorithm to gather pixel RGB values due to it being more efficient than an recursive approach
  - Implemented OpenCV for pixel data Analysis and Numpy to create a mask for detection of certain colors on the screen guided by the upper and lower bounds.
  - Program was designed to read and parse a csv file containing checkpoints of location coordinates.
  - Used Object-Oriented Design theory to integrate key topics such as Inheritance, Polymorphism, and Data Abstraction.
  - Pre-programmed responses to control the user's keyboard and mouse based on pixel data taken from the OCR and other logical parameters.
  - Implemented Advanced Vector Theory to correctly calculate the velocity and acceleration of certain objects captured through OpenCV.

  *Development Environment: Python3 (Libraries: NumPy, Python Imaging Library, OpenCV, more_itertools, win32gui, time), git, github, Visual Studio Code, Windows*

- **Covid-19 Vaccine Vaccine Response Tracker** *2020*

  Website Scraper tasked with monitoring the York Region Vaccine distribution availability site, and sending alerts to a discord group chat when certain parameters are met.
  - Used GET requests to access and search through HTML elements
  - Implemented an algorithm to efficiently sort through information on the site to get key values.
  - Added an event listening functionality to wait for the scraper responses and relay information in Discord accordingly.
  - Manipulated text data to provide a more user-friendly and readable response so that non-technical users would be able to understand and utilize the information.

  *Development Environment: Python3 (Libraries: beautifulsoup4, urllib, time), discord, git, github, Visual Studio Code, Windows*

## EXPERIENCE

**AutoBoys Garage**                                                                                          Concord, ON
*Assistant automotive service technician*                                                        *Summer of 2020*
  - General maintenance: Oil, filters (intake/cabin), pads/rotors, changing/mounting/balancing wheels
  - Assisted with the installation of various automotive parts
  - Diagnostic and repair
  - Safety inspections

**Freelance Labourer**                                                                                          2016-Present
  - Lawn care
  - Snow shovelling
  - Power washing
  - Basic car servicing (Swapping winter and summer tires/oil changes)
  - Furniture installation / Event setup