

# CONNOR BARKER

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## Experience

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### Machine Learning Developer | Konrad Group

May - August 2019

- Created an iOS app using RxSwift, which uses a convolutional neural network to interpret digits the user draws
- Implemented on-device retraining using the Core ML 3 beta to update and save a model, increasing accuracy by 40%
- Built and trained a convolutional neural network using Keras and the MNIST database to recognize handwritten digits
- Wrote Python scripts to save a trained Keras model and convert it to Apple's .mlmodel file format
- Researched and created content for a digital course on cloud computing, including writing scripts for a voice actor

### Web Developer | Konrad Group

September - December 2018

- Created pages for a web app built in React 16, using the latest WC3 web accessibility standards such as ARIA tags
- Designed unit-testable, stateful components using Enzyme and Jest, increasing overall test coverage by 110%
- Developed key features such as a PDF viewer, custom input fields and radios, and a progress tracker
- Wrote Yarn commands to automate end-to-end and integration testing with Puppeteer and Chromium

### Fullstack Developer | UWaterloo Portal Team

January - April 2018

- Developed an MVC ASP.NET analytics tool using C#, SQL, Ionic, and Angular to display student app usage data
- Optimized data processing using a SQL abstraction layer and sorting algorithms, improving API response time by 75%
- Responsible for developing the new UWaterloo interview paging system, allowing students to check in from their phones and letting staff update interview times/locations

## Projects

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### ASCIIfy

JavaScript, jQuery, HTML, Chromium, Chrome extension framework

- Designed chrome extension which uses jQuery to search for images on a webpage and convert them into ASCII art
- Parses pixel data and finds average color values, assigning them to ASCII characters and placing them on the page
- Circumvents cross-origin security restrictions by recreating the images locally, then manually setting their origins
- Blocks of text produced replace images on webpage without changing layout, and can be copied/pasted elsewhere

### AMSAT

JavaScript, Natural Language Processing, node.js, Heroku, RESTful/Streaming Twitter API

- Created a Twitter bot with JavaScript which retrieves Tweets from users and uses them to generate sentences
- NLP string generator was custom-built to create Tweets, and uses Markov chains to parse large quantities of text
- Bot makes efficient use of RESTful and streaming Twitter APIs to completely automate the bot (hosted on Heroku)

## Education

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### University of Waterloo

Candidate for Bachelor Of Applied Science, Honours Computer Engineering

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