

# HongKun Tian

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## Skills

### Programming Languages

Python, Java, C/C++, C#, JavaScript, OCaml, MIPS Assembly Language, Bash, PostgreSQL

### Libraries & Frameworks

scikit-learn, PyTorch, Matplotlib, NumPy, Pandas, .NET, React, Gatsby, HTML, CSS, Sass, Node.js

### Tools & Platforms

Git, Netlify, Azure DevOps, L<sup>A</sup>T<sub>E</sub>X

### Languages

English, French, Mandarin

## Completed Courses

- Algorithms & Data Structures
- Applied Machine Learning
- Database Systems
- Discrete Structures
- Fundamentals of Computer Graphics
- Linear Algebra
- Numerical Computing
- Operating Systems
- Probability
- Programming Languages & Paradigms (functional programming)
- Software Design
- Statistics

## Certifications

### Machine Learning

by Stanford University on Coursera  
Certificate earned on 04/09/2020

### Computer Vision Nanodegree on Udacity

Certificate earned on 04/21/2020

## Experience

### UMaKnow

Software Development Intern

Montreal, Canada

Jun. 2019 – Aug. 2019

C#, .NET, VISUAL STUDIO, HTML5, CSS3, JAVASCRIPT, AZURE DEVOPS

- Developed a server-side REST API for Clouddokit, a cloud environment diagram generator for AWS, Azure and GCP, using .NET Framework, through which end consumers can trigger document generation.
- Built an interactive page using HTML, CSS, JavaScript through which end consumers can visualize and interact with the API's endpoints.
- Developed automated acceptance tests that detected irregularities and unwanted changes within template documents and generated documents using Aspose file management APIs, improving the robustness of code deployment.

## Projects

### Projects @ Udacity Computer Vision Nanodegree

Mar. 2020 – Apr. 2020

PYTHON, OPENCV, PYTORCH, MATPLOTLIB, SEABORN, NUMPY, PANDAS, NLTK

- Project 1:** Performed image processing and created a CNN using PyTorch to detect faces in an image and find facial keypoints.
- Project 2:** Created complex deep learning model with a CNN encoder and a RNN decoder that produces rich, descriptive captions given an input image.
- Project 3:** Implement a robust method for tracking an object over time with SLAM.

### Projects @ McGill Applied Machine Learning Course

Jan. 2020 – Apr. 2020

PYTHON, PYTORCH, SCIKIT-LEARN, MATPLOTLIB, SEABORN, NUMPY, PANDAS

- Project 1:** Implemented Logistic Regression and Naive Bayes to classify targets from datasets acquired from UCI Machine Learning Repository.
- Project 2:** Investigated various multi-class classification models (Logistic Regression, Decision Tree, Support Vector Machine, AdaBoost, and Random Forest) on two textual datasets preprocessed through vectorization and TFIDF weighing.
- Project 3:** Implemented Multilayer Perceptron and its backpropagation from scratch, and developed a CNN using PyTorch to classify image data on CIFAR-10 dataset.

### MindBook @ ConUHacks 2020

Jan. 2020

REACT, CSS3, IBM TONE ANALYZER, NODE.JS, FIREBASE

**Summary:** Journal logging web app that performs sentiment analysis and provides recommended activities based on the predictions.

- Built the client-side UI using React and CSS.
- Hooked up Firebase to our Node.js backend to save journal entries from users.
- Implemented IBM Tone Analyzer API and business logic to provide suggestions to users.

### TravelCC @ Hack The North 2019

Sep. 2019

JAVA, FIREBASE API, XE CURRENCY DATA API

**Summary:** Automatic foreign currency conversions through a smartphone's camera.

- Implemented API calls to Firebase API and XE Currency Data API.

### NLPure @ McGill CodeJam 2018 – First Place Overall

Nov. 2018

KERAS, SCIKIT-LEARN, REACT, NODE.JS

**Summary:** Text toxicity detection built using Keras.

## Education

### McGill University

Montreal, Canada

Bachelor of Science – Honours Computer Science

Sep. 2018 – Exp. May 2021

Cumulative GPA: 3.64/4.00

### Marianopolis College

Montreal, Canada

Diploma of College Studies – Pure and Applied Sciences

Sep. 2016 – Jun. 2018

Global R Score: 35.662

- Dean's List (All semesters): Overall grade average of 85% and above and completion of courses required by the program for that semester.