# YUSHUO HAN

### **SUMMARY OF QUALIFICATIONS**

#### **LANGUAGES**

Python, JavaScript, C/C++, Java, HTML/CSS

### DATA SCIENCE AND MACHINE LEARNING

Keras, Tensorflow, Scikit-learn, PyTorch; Numpy, Pandas; Matplotlib, Seaborn

#### **AMAZON WEB SERVICES**

Sagemaker, Rekognition, ECR; EC2, Lambda; Step Functions, API Gateway, SES; S3, CloudWatch; IAM

#### **CONTAINERIZATION**

Docker, AWS ECR

#### **DATABASES**

MySQL, MSSQL, MongoDB

### FRAMEWORKS AND ENVIRONMENT

OpenCV, Pillow, and Imgaug; React.js, Node.js, Express.js, JWT, and Socket.io; SQL Alchemy, CherryPy, and Mako

#### STRONG COMMUNICATION SKILLS

with experience of working in teams of various sizes

# **RELEVANT COURSES**

- Algorithms (Algorithm design and analysis, dynamic programming, graphs).
- Computational Statistics and Data Analysis
   (R, noisy functions, multivariate distribution, Markov Monte Carlo, supervised statistical learning, discrimination methods).
- Mathematical Statistics (Likelihood Ratio Test, multivariate and limiting distributions)
- Object-oriented Software Development (C++, OOP, design patterns, Bash)
- (Advanced) Design Functional Programs (Data structures, time complexity, sorting, lazy evaluation, lambda calculus)
- Operating Systems (Concurrency, synch., processes, threads, scheduling)

## **EDUCATION AND ACHIEVEMENTS**

# B. OF COMPUTER SCIENCE (2018-2023) University of Waterloo (Average: 91.1%)

- Mathematics Global Scholarship for exceptional international applicants
- President's Scholarship of Distinction for over 95% average
- Mathematics Promissory Scholarship for outstanding Euclid contest performance

# DISTINCTION (99.5% PERCENTILE WORLDWIDE) AND SCHOOL CHAMPION IN EUCLID/FERMAT/HYPATIA CONTESTS

#### University of Waterloo | OCT 2016 - JUN 2017

 Invited to UWaterloo on-campus workshops based on outstanding contest performances

#### **DEAN'S HONOURS LIST**

#### University of Waterloo | SEP 2018 - APR 2019

Awarded "Term Dean's Honours List" for all terms .

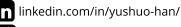
# **Bachelor of Computer Science, Data Science, 3A**

git github.com/shawnhan108



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# shawnhan108.github.io WORK EXPERIENCE

# AI/ML SOFTWARE DEVELOPER (CO-OP)

WorkshopX | Ottawa, ON | MAY - AUG 2020

- Implemented an automated workflow of the training and deployment of AWS Sagemaker deep learning models using AWS Step Functions, CloudWatch, API Gateway, Lambda, and SES.
- Created model inference services using PyTorch, Docker and AWS ECR. Trained and deployed deep learning models using AWS Rekognition and Sagemaker. Models include u2net and BiSeNet.
- Researched and developed an image background removal service utilizing a u-net model and an advanced matting network, on AWS EC2 and Sagemaker.

#### SOFTWARE DEVELOPER (CO-OP)

Opentext HQ | Waterloo, ON | MAY - AUG 2019

- Pitched and completed a project on the failure analysis feature of software products' web-based internal automation test platform using MSSQL, SQL Alchemy, CherryPy, and Mako Templates.
- Implemented object-oriented framework functions and mapped
   UI objects using Python for PyWinAuto and command line test automation framework.

# **PROJECT EXPERIENCE**

#### NATURE NOTEBOOK | MAY-JUL 2020 | /shawnhan108/nature-notebook

- Created a set of notebooks that leverage classical ML algorithms and DL neural nets using TF, Keras, and Theano to address a series of issues and topics in the field of biology and conservation.
- Implemented CycleGAN, BiLSTM, and CNN models. Utilized
   Scikit-Learn algorithms including KNN, SVM, Random Forest and
   Keras built-in models including Inception-ResNet-V2 and Vgg-16.
- Developed, trained, and inferenced models after exploratory data analysis and data preprocessing using **Numpy and Seaborn**.

#### **RECOMMENDERS** | JUL-AUG 2020 | /shawnhan108/The-Recommenders

- Created two recommender systems using Collaborative Filtering,
   Matrix Factorization, residue learning, and Bayesian Bandit.
- Implemented a Deep Learning Architecture for Collaborative
   Filtering Recommender Systems, proposed by Bobadilla et al (2020).

#### DOT. | SEP - SEP 2019 | /shawnhan108/DOT.

- Designed and implemented an accessibility application that converts eye movements to communication messages using Python OpenCV.
- Used Keras library to train a binary classifier Machine Learning model using a dataset between open and closed eyes.

#### SPOTSHARE JUN - SEP 2019 /shawnhan108/SpotShare-Backend

- Created a photography web app using Node.js backend (RESTful API), React.js frontend, MongoDB NoSQL database, Mapbox dynamic map API, JWT authentication, and socket.io for Websocket.
- Featured posts with photography specs, post and location ratings and rankings, customized map and markers, and keyword searching.