# YUSHUO HAN

# **SUMMARY OF QUALIFICATIONS**

#### **LANGUAGES**

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

# DATA SCIENCE AND MACHINE LEARNING

Keras, PyTorch, Tensorflow, Scikit-learn; 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, 3B

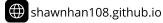
git github.com/shawnhan108



y262han@uwaterloo.ca



(+1) 613-698-4357



### WORK EXPERIENCE

# AI/ML SOFTWARE DEVELOPER (CO-OP, EXTENDED PART TIME) WorkshopX | Ottawa, ON | MAY - DEC 2020

- Researched, developed and trained an advanced, latest image
  matting network on AWS EC2, including creating and augmenting
  datasets, developing training code and loss functions in PyTorch,
  adjusting hyperparameters, and visualizing loss using TensorBoard.
- 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.

## 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.

# **PROIECT 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.