YUSHUO HAN

Bachelor of Computer Science, Data Science, 3A

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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 .

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.