Sharhad Bashar

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Education

University of Waterloo | **Waterloo, ON** — **2019 - 2022**
Master of Mathematics | **Computer Science**
Research focus: AI, Machine Learning and Computer Vision
TA: AI/ML, Functional, C and Concurrent Programming, Data Structures and Operating Systems

McGill University | **Montreal, QC** — **2012 - 2017**
Bachelor of Engineering | **Honors Electrical Engineering**, Minor: Software Engineering

Experiences

Data Scientist, Lawfully | Manhattan, NY | **Python, Scala, SQL, AWS** — **2022- Present**
- Working as a data scientist and backend engineer to simplify USCIS immigration process
- Scraped 100 million+ immigration data for future AI projects
- Created feature to show complete immigration history for users

AI Engineer Intern, Huawei | Ottawa, ON | **Python, TensorFlow, PyTorch, Keras** — **2021 - 2022**
- Worked with wireless and traffic data to improve Autonomous driving
- Created a simulator in Python to simulate travel pattern of thousands of vehicles in a city
- Developed patent pending AI for next gen navigation system
  - Build AI models with PyTorch and sklearn in Python with dataset of over 32 million entries
- Build Federated Learning models using TensorFlow for thousands of image and Fintech data

NLP Research Intern, Nuance Communications | Montreal, QC | **Python, TensorFlow** — **2020**
- Implemented new strategies and models to improve Automatic Speech Recognition
- Research and implemented BERT models to analyze millions of online product reviews

Lead Software Engineer , Hvr Tech | Toronto, ON | **Python, Flutter, Dart Lang, SQL** — **2019**
- One of the chief developers for a brand new social media browser, with Python and SQL
- Created the mobile app (beta available here) from scratch using Flutter, Dart Lang and SQL

Full-stack Engineer, NexJ Health | Toronto, ON | **NodeJS, MongoDB, Express** — **2018 - 2019**
- Worked on a state-of-the-art health app used by over 10,000 users worldwide
  - Improved user experience by integrating "login with username" option
  - Increased user engagement by designing a user points awards system from scratch
  - Fixed over 100 bugs on the frontend and backend

Backend Software Engineer, Montrium | Montreal, QC | **C#, Python, Java, SQL** — **2017 - 2018**
- Worked on the backend for a new platform for pharmaceutical study and trial management system, used by over 100 pharmaceutical companies world wide
  - Created APIs and primary security functions using .NET Core, C#, and Cosmos GraphDB
- Led a team of five to fully automate unit and system testing using Selenium on Java and Powershell to reduce software testing phase from days to mere minutes
- Developed a deep NN using TensorFlow to translate company's solutions to 7 languages

Electrical Engineering Student, CNRL | Fort Mackay, AB | **C** — **2016**
Robotics Engineering Student, St. Joseph's Hospital | London, ON | **C++, Python** — **2013 - 2015**

Thesis Projects

Graduate | ***Semantic Segmentation*** | University of Waterloo | **Python, PyTorch** — **2020 - 2022**
- Using image level data and **approximate class size** to improve accuracy of Weakly Supervised Semantic Segmentation. Thesis title: **Volumetric Weak Supervision for Semantic Segmentation**
- Improved the accuracy by over 6% mean Intersection over Union

Undergraduate | ***Image Captioning*** | McGill University | **Python, TensorFlow** — **2016 - 2017**
- Used Convolutional and Recurrent Neural Networks from TensorFlow to generate image captions with text descriptions in less than 5 seconds using Python, MatLab and CUDA

Projects

Applied Machine Learning and Data Optimization | **Python** — **2017 - Present**
- Programmed several different optimization methods, including Gradient and Coordinate Descents, ALM and ADMM, Graph Clustering, noise reduction and others
- Created models for pattern recognition, Semantic Segmentation and Object Detection, using neural networks, support vector machines, decision trees and more
- Used PyTorch libraries and CNN for unsupervised single image depth prediction
- Used Intel RNN and data sets for speech recognition

Various Node, React, Angular projects | **NodeJS, ReactJS, AngularJS, MongoDB** — **2018 - Present**
- Made various API and CRUD apps for user auth, weather app, photo editing and others
- Used the latest JS tech, as well as MongoDB, Google, YouTube and several other APIs

Notable undergrad projects | **Java, C** — **2014 - 2016**
- Designed and created a wireless mouse using the ARM Cortex STM32F4 board
- PM of a team of six, designed a robot to perform a "Search and Rescue Mission" as seen here

Skills*

Languages:
- **Python** ●●●●○
- **Java** ●●●●○
- **C** ●●●○○
- **C#** ●●●●○
- **Dart Lang** ●●●●○
- **HTML/CSS** ●●●●○
- **MATLAB** ●●●○○
- **Visual Basics** ●●●●○
- **C++** ●○○○○

Libraries:
- **TensorFlow** ●●●●○
- **PyTorch** ●●●●○
- **OpenCV** ●●●○○
- **SciPy** ●●●○○
- **Scikit-Learn** ●●●●○
- **Keras** ●●○○○
- **Theano** ●●○○○
- **Pandas** ●●●●○
- **AWS** ●●●●○

Frameworks:
- **ASP.NET Core** ●●●○○
- **Node** ●●●●○
- **Angular** ●○○○○
- **React** ●●●○○
- **Selenium** ●●●●○
- **Flutter** ●●●●○

Database:
- **PostgreSQL** ●●●○○
- **MongoDB** ●●●●○

Scripting:
- **Bash** ●●●●○
- **Git** ●●●●○
- **PowerShell** ●●●○○

* >= 4 stars -> Advanced
== 3 stars -> Intermediate
<= 2 stars -> Beginner

Honors and Awards

Master of Mathematics — 2019 - 2021
Full Scholarship
University of Waterloo

Honors List — 2014 - 2017
Entrance Scholarship — 2012 - 2017
Clifford Knowles Bursary — 2016
George Duggan Bursary — 2015
McGill University

Deans Award — 2015
NSERC-USRA — 2013
UWO