Emad Ahmed

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RESEARCH (uWaterloo)

KIMIA Medical Imaging Lab Sept 2018 - Present

- Researched viability of different implementations for one-class classification problems to classify malignant and benign kidney whole slide images
- Built data pipeline using OpenSlide to process images with tiles and implemented various algorithms for Positive Unlabeled Learning such as PU Bagging, standard classifiers and two step approaches

EXPERIENCE

Shopify, Software Engineering Intern Sep 18 – Present
San Francisco, CA

- Migrated Shopify Kit App (~ 200k merchants) from Amazon Web Services to Google Cloud Platform
- Successfully migrated a 1.5 TB database from RDS to Google Cloud Storage
- Optimized web server/load balancer to handle hundreds of concurrent requests

Shopify, Software Engineering Intern Jan 18 – Apr 18
Waterloo, ON

- Built tool to import 1 million customers via async jobs on Google Cloud Storage
- Reduced import time from 35 hours to 15 minutes by optimizing SQL inserts
- Built GraphQL errors model to communicate errors from any backend service

PiinPoint, Software Developer Intern May 17 – Aug 17
Waterloo, ON

- Architected report generation system including back-end API and front-end
- Integrated Points of Interest with Routing APIs to get driving/walking times

Evertz, Software Developer Intern Sep 16 – Dec 16
Burlington, ON

- Built preview feature for digital replay video player from scratch
- Optimized video player by limiting DB queries, reducing bandwidth usage by 20%

PROJECTS

Malaria Detection from Blood Smears Keras, scikit-learn, matplotlib

- Classifies Malaria from blood smear images as an alternative to Rapid Diagnostic Tests (RDT) which are less accurate
- Utilized ResNet architecture along with data augmentation to optimize model

Predicting Irregular Heartbeat Python, TensorFlow, CardIO

- Detects atrial fibrillation from ECG signals using Dirichlet model and CardIO
- Built data pipelines to process signals in batches resulting in F1 score of 0.90

Face Recognition Python, TensorFlow, dlib

- Built face recognition system including face detection, facial feature detection and face encodings
- Used Histogram of Oriented Gradients (HOG) to train face detection model

Education

University of Waterloo

3B Systems Design Engineering

Graduating April 2020

Skills

Data

Keras
TensorFlow
Scikit-learn
Apache Spark
CardIO
OpenSlide
NumPy
SQL

Languages

Java
Python
Ruby
JavaScript
C++

Tools

Google Cloud
AWS
Docker
Kubernetes
Buildkite

Interests

Health Tech
AI
Social Impact Tech
Podcasts
Distributed Systems
Basketball