Mazen Alotaibi

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Education

Oregon State University *College of Elect. Eng. & Comp. Sci.* Corvallis, OR (September, 2015 - June, 2019)
B.S. in Computer Science Applied in Artificial Intelligence, with Minor in Actuarial Science (GPA: 3.69/4.0).

Core Courses: Objected-Oriented Programming, Data Structures, Analysis of Algorithms, Databases, Computer Architecture and Assembly Language, Digital Logic Design, Theory of Computation, Computer Networks, Operating Systems, Artificial Intelligence, Software Engineering, Parallel Programming, Machine Learning and Data Mining, Intelligent Robots, Discrete Mathematics, Linear Algebra, Probability, Statistics, Numerical Analysis, and Mathematical Statistics.

Experience

GPU Computational Researcher Corvallis, OR (11/2018 - Present)
Center for Genome Research and Biocomputing

- Built a website that races multiple **high-end GPUs**, such as POWER9 Newell(AC922) with V100 GPGPU, POWER8 Minsky with P100 GPGPU, Intel x86 with K80 GPU, and much more, against each other and running on them multiple **cutting-edge deep learning models**, such as AVIANn CNN, Plankton CNN, CASSA Sequence Alignment, and much more.
- Built a fully dynamic website using **jQuery**, **PHP**, and **BASH**.

Lead Photographer Dhahran, Saudi Arabia (Summer 2012)
Saudi Aramco Summer Program

- Managed a team of 6 photographers to document summer program events.
- Hosted and organized multiple teaching photography sessions for **more than 70 inspired photographers**.

Technical Skills

Programming Languages(Experienced): C/C++, JavaScript, Python, PHP, Bash, and R.
Programming Languages: MATLAB, Java, and NGINX.
Libraries/Frameworks: NumPy, OpenCV, PyTorch, jQuery, and Node.js.
Tools: Git, SQL, NoSQL, Markdown, and LaTeX.
Languages: Arabic (Native), English (Professional Proficiency), and Japanese (Elementary Proficiency).

Projects

Senior Design Project Octber, 2018 - Present
https://github.com/PavementPrometheus/Street-Watch

- Designing the entire pipeline of the system, building the computer vision models, communicating with Dr. Li and our technical advisor from Georgia Tech, Chanho Kim, and assigning tasks and responsibilities to my teammates.
- Worked on building a real-time object detection demo for our presentation to the City of Portland Representative and Dr. Fuxin Li, setting up CARLA, a simulation tool, and collecting more than 2,000 images from Portland's surveillance cameras as our test dataset for our demo.
- Collected the testing datasets using **Node.js** and the computer vision model will be built using **PyTorch** .

AI Demo November, 2018 - December, 2018

http://techdata.cgrb.oregonstate.edu/access/

- Built a website that races multiple **high-end GPUs**, such as POWER9 Newell(AC922) with V100 GPGPU, POWER8 Minsky with P100 GPGPU, Intel x86 with K80 GPU, and much more.
- Each race will be ran against each other and running on them multiple **cutting-edge deep learning models**, such as AVIANn CNN, Plankton CNN, CASSA Sequence Alignment, and much more.
- Built a fully dynamic website using **jQuery**, **PHP**, and **BASH**.

Image Captioning July, 2018 - August, 2018

https://github.com/madebymaze/image-captioning

- Built a **Convolutions Neural Network-Recurrence Neural Network** (CNN-RNN) model to automatically generate captions from images using **NumPy**, **OpenCV**, and **PyTorch**.
- Trained the *CNN-RNN* model on **MS COCO dateset** that takes any image and automatically generate captions that describes the image with a probability score of likelihoods of accuracy.
- Trained the Encoder[*CNN*] for feature extracting and trained the Decoder[**Long Short-Term Memory** (LSTM) cells in *RNN*] to generate captions.

Facial Keypoints Detection June, 2018 - July, 2018

https://github.com/madebymaze/facial-keypoints-detection

- Built a *CNN* model to predict Facial Keypoints using **NumPy**, **OpenCV**, and **PyTorch**.
- Trained the *CNN* model to detect faces and predicts **68 distinguishing keypoints** on that face.
- Pre-processed input images to the *CNN* model from noises for training using *Modern Computer Vision Techniques*.

Self-Driving RC Car May, 2018 - June, 2018

https://github.com/OSUmlaiclub/SelfDrivingRCCar/tree/maze

- Wrote a web app that streams a live-feed and a controller to control an RC Car's controller, **Raspberry Pi**, using **Node.js**, **JavaScript**, and **Python**.
- Researched and cleaned a set of datasets in a cloud-server to be used to train the machine learning model.
- Built the structure of the intelligent agent and machine learning model.

Image Classification May, 2018

https://github.com/madebymaze/image-classification

- Wrote an **Multiple Layer Neural Networks** (MLP) that classifies images using **NumPy** and **PyTorch**.
- Trained the *MLP* model using **CIFAR-10 dataset**.
- Documented and reported the *MLP*'s accuracy and results using **LaTeX**.

Aces Up Game November, 2017 - December, 2017

https://github.com/madebymaze/AcesUp.game

- Wrote a web app with a team using **Java** *Ninja framework* for back-end, **JavaScript** for front-end, and **Heroku** and **GitHub** to host the web app.
- Built interactive animations and a tracking system using *JavaScript*.
- Won the **Best Web Application for Software Engineering I** *(CS-361)*.

Personal Website December, 2016

https://github.com/madebymaze/madebymaze.github.io

- Wrote a personal website using **Node.js** for back-end and **JavaScript** for front-end.
- Hosted my website on virtual machine **(DigitalOcean)**.
- Wrote a **NGINX** script that directs HTTP requests to HTTPS and maps networks.

A.I. Algorithm for a 2D Grid Game April, 2016

https://github.com/madebymaze/ai-2d-grid-game

- Wrote a 2D grid game, *Hunt the Wumpus*, with a dynamic grid size using **C++**.
- Wrote an embedded intelligent agent, inspired by *Minesweepers*, to solve the game using *Probability Distribution Methods*.
- Acquired code organization skills by modularizing my programs and defining appropriate classes.

Extracurricular Activities

OSU Machine Learning/A.I. Club Corvallis, OR (May, 2017 - Present)

Active Member

- Worked with a team on *Self-Driving RC Car*.
- Worked with a team on a Kaggle competition in the area of health-care.

PyImageConf2018 ***(Conference)*** San Francisco, CA (August, 2018)

Attendee

- Attended a conference that focuses on advanced techniques in *Computer Vision* and *Deep Learning* research and their implementations to solve real world problems.
- Built a **Faster Regional-Convolution Neural Networks** (Faster-R-CNN) from scratch to classify images with higher accuracy than well-known networks using **NumPy** and **PyTorch**.

DesertHacks ***(Hackathon)*** Phoenix, AZ (February, 2017)

Participant

- Worked with a team to build a web application that analysis a user's behavior from a list of previous behaviors based on *Markov Chain Methods* using **Node.js** and **Flask** for back-end, **JavaScript** for front-end, **Python** for data analysis, and **SQL** for data saving and pulling.
- Hosted the web application on **Amazon Web-Services** (AWS).

App Club OSU Corvallis, OR (Mar, 2016 - Nov, 2017)

Active Member

- Worked to build small projects using new tools with club members.
- Helped new members in explaining web development technologies and common practices in development.