

SYED ZAIN ALI BAQUAR

Data Scientist / Software Engineer / Machine Learning Engineer

@ zain.baq@gmail.com

☎ 818-852-9817

🌐 zainbaq.netlify.com/

in linkedin.com/in/zainbaq

🐙 github.com/zainbaq

EDUCATION

B.S in Cognitive Science specializing in Machine Learning & Neural Computation

UCSD (University of California, San Diego)

📅 2015 - 2019

EXPERIENCE

Machine Learning Operations Engineer

Regeneron Pharmaceuticals

📅 2022 - present

📍 Sleepy Hollow, NY

- Maintained numerous MLOPs initiatives in Dataiku, including creating EC2 instances, managing EKS clusters and developing distributed training frameworks using OpenMPI and Horovod.
- Automated several operational processes using AWS Lambda and Jenkins. Including server storage cleanup, system status checks and docker image management for our EKS clusters.
- Developed data drift algorithms to ensure that rich and meaningful data is always been used by Data Scientists, triggering alerts when drift is detected.

Sr. Software Engineer - Machine Learning

Visionet Systems Inc

📅 2020 - present

📍 Cranbury, NJ

- Executed scale-able end-to-end Customer Segmentation allowing retail clients to target customer groups with different marketing strategies.
- Implemented algorithms to predict customer churn and life-time value, allowing our business clients to gain actionable intelligence on how to retain customers or adjust retention strategies.
- Released a time series forecast model to forecast sales, demand and inventory for future periods, liberating around 400k USD for more efficient budgets in managing inventory and promotional campaigns.
- Performed year-over-year enterprise analysis, finding key drivers for sales growth, conversion rate and other key performance indicators.
- Collaborated with data engineers, and database architects to create and manipulate large databases to import for data exploration, visualization, analysis, interpretation, and monitoring.

Research Assistant

Swartz Center for Computational Neuroscience (UCSD)

📅 2018 - 2019

📍 San Diego, CA

- Collaborated with a team supervised by Dr. Gedeon Deak and Dr. Tzyy-Ping Jung at SCCN to conduct an experiment to observe brain dynamics during social decision making using EEG and Pupil Labs eye tracking software - published by the Kavli Institute of Brain & Mind.
- Programmed the game used in the experiment in Python as well as performed the necessary data analysis by evaluating EEG and eye tracker results in MATLAB in an attempt to isolate the P300 signal seen upon not seeing an expected outcome.

SKILLS AND TOOLS

- Python, ReactJS, SQL, Linux, PyTorch, TensorFlow/Keras, OpenCV, scikit-learn, AWS Console, EKS, EC2s, Dataiku, Azure, Anaconda, SQL Server Management Studio, PowerBI, Tableau

PROJECTS

Character-level Brain Computer Interface

2022 - present (Python)

- Actively building a brain computer interface (BCI) to read EMG readings from the larynx and other facial muscles to predict the character or word being sub vocalized, with the overall objective to think of a word or character and have it appear in a text field.
- Collected data from myself by attaching 4 gold cup electrodes to my face and larynx and streaming the data using a Ganglion board and PyLSL.
- Labelled the data using the 26 letters of the English alphabet, as well as "period" and "space".

Medical Machine Learning

2019 - present (Python)

- Developing an application to host predictive algorithms for a number of medical diagnoses and events.
- Applied computer vision techniques to detect dementia in brain MRI scans.
- Predicted the occurrence of cardiovascular disease in patients to an accuracy of 75% and Type 1 error of 16% using principal component analysis.

Dash Cam Speed Detector

2020-2021 (Python)

- Developed a deep convolutional neural network (CNN) to predict vehicle speed from dash cam footage.
- Implemented dense optical flow on each frame to capture pixel color differences between frames of the video as features for the model.
- Succeeded in having the model identify lane lines and other filter out other objects in the vicinity.

PUBLICATIONS

Medium Writer

Towards Data Science/Dev Genius

📅 2022 - present

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- Authored and published a number of articles and tutorials on Data Science topics.

Decision-Making in a Social Multi-Armed Bandit Task: Behavior, Electrophysiology and Pupillometry