

Nikhil D'Souza

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Education

Purdue University – West Lafayette, IN May 2022

- B.S. in Computer Science, Data Science, Applied Statistics (GPA: 3.84)
- Coursework: Advanced Neural Projects, Data Mining & ML, Analysis of Algorithms, Neural Image Processing, Intro to AI, Data Structures & Algorithms, Large-Scale Data Analytics, Regression Analysis, Probability, Linear Algebra, Multivariable Calculus
- Head Teaching Assistant of The Data Mine (1000+ students and 50+ corporate partners)

Coursera – deeplearning.ai by Andrew Ng 2020

- Neural Networks and Deep Learning
- Improving Deep Neural Networks: Hyperparameter Tuning, Regularization, and Optimization

Experience

Fast MRI Reconstruction using Deep Learning – Undergraduate Researcher Aug 2021 - Present

- Investigating the use of AI to make MRI scans up to 10x faster by reconstructing accurate images from undersampled data.
- Training a generative adversarial network with images that are Fourier transforms of 20% subsampled and fully sampled k -space data.
- Utilizing a GAN with a U-Net-based generator architecture and residual in residual dense blocks (RRDBs).

Computational Seismology & Tectonics Lab – Undergraduate Researcher May 2021 - Present

- Exploring unsupervised ML methods such as K-Means to cluster earthquake waveforms from the USGS database.
- Automating the cataloging of composite waveforms after clustering time-series data to facilitate template matching.
- Building a robust and complete template library, while reducing computational runtime by over 50%.

Eli Lilly – AI/ML Intern May 2021 - Aug 2021

- Analyzed clinical trial data to predict trial site performance and further identify new indications of in-market Lilly drugs.
- Used PCA, logistic regression, and XGBoost to determine if Lilly-sponsored trials should continue being funded.
- Identified reasons why investigators reforecast trial enrollment estimates using TF-IDF.

Vincere Health – Software Engineer & Data Scientist Oct 2019 - Aug 2020

- Built a platform that uses financial incentives, behavioral nudges, and evidence-based interventions to help quit smoking and be healthy.
- Developed patient facial recognition, chat messaging using sockets, and incentive engine using Redis.
- Spearheaded data science capability providing actionable insights, user performance, and patient rewards.

Viasat – Data Science Intern Oct 2018 - Apr 2019

- Built an anomaly detection framework using unsupervised ML to detect patterns in time series data and predict satellite downtimes.
- Used the Generalized ESD algorithm with seasonal decomposition to detect faulty equipment, congestion, and usage anomalies.

Saama – AI Intern Jun 2018 - Aug 2018

- Used supervised ML techniques to identify packaging anomalies on a conveyor belt for a leading biotech company.
- Developed CNN with 97% validation accuracy and leveraged image augmentation to expand the dataset.

Projects and Awards

Mask Autoencoder – Smart Software Hackathon (2nd Place Overall Winner) 2021

Feverbase.org – COVID clinical trial data platform 2020

Harvard President's Innovation Challenge – Grand Prize Winner 2020

L3Harris Technologies Scholarship – Purdue CS Awards 2019

Calculating Fatigue of Rugby Athletes – ASA DataFest (1st Place Overall Winner) 2019

Predicting Emerging eSport Celebrities – Krannert eSport Hackathon (3rd Place Overall Winner) 2018

GluClose – PennApps XVIII (2nd Place Overall Winner) 2018

Apple Worldwide Developer Conference Scholarship Winner 2015

Skills

Languages/Tools: Python, R, SQL, Tensorflow, Pytorch, Flask, React, Typescript, JS ES6, Node.js, Swift, Java, C, Unix, Git, Docker, Redis

AWS Services: EC2, S3, Lambda, API Gateway, Sagemaker, Elasticsearch, CloudWatch, Rekognition, Comprehend, SNS, Cognito