Nikhil Dutt

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SUMMARY

4th-year undergraduate (taking a gap year) at the University of California, Berkeley pursuing a dual degree in Data Science and Economics.

EDUCATION

Bachelor of Arts - BA: Double Major in Data Science and Economics
University of California, Berkeley • 2017 – Present (Expected Graduation: Fall 2021)

EXPERIENCE

Undergraduate Researcher
Department of Economics, UC Berkeley **August 2020 – Present, Berkeley, California, United States**
• Collaborating with Ph.D. Student James Sayre, the United Nations Office on Drugs and Crime (UNODC), and The Abdul Latif Jameel Poverty Action Lab (J-PAL) to study the consequences of illegal drug production in Mexico (**$10,000 Grant**).
• Building a machine learning pipeline that analyzes the change in Normalized Difference Vegetation Index (NDVI) over time and incorporates **Convolutional Neural Networks** (CNN) to detect poppy cultivation within satellite imagery.
• Utilizing parallel **multi-GPU** training from the Berkeley Savio Compute Cluster to process over **100 square miles** of imagery.

Machine Learning Consultant
Paladin Drones **August 2020 – Present, Berkeley, California, United States**
• Paladin Drones is a Y-Combinator high growth startup (**1.3M seed**) that deploys drones in emergency settings to aid first responders.
• Refining **YOLOv3**, a real-time object detection model, to identify potential hazards from a drone live-feed. The model is being built in TensorFlow lite, allowing the video to be processed on the mobile devices of first responders, **reducing latency by 40%.**

Project Manager
Big Data at Berkeley **January 2020 – Present, Berkeley, California, United States**
• Big Data at Berkeley is a student organization dedicated to using the power of data to impact our community
• Coordinated meetings, advised a team of **8 data consultants**, provided technical support, and managed client communication
• Developed actionable, data-driven recommendations for clients, based on past performance, current trends, and future predictions

DS4A Fellow
Correlation One **October 2020 – Present, New York, New York, United States**
• Data Science For All is a competitive (**<6% acceptance rate**), merit-based, data analytics, and artificial intelligence training program for students from underrepresented backgrounds. The fellowship is sponsored by Citadel, Two Sigma, Point 72, and Marshall Wace.

Data Science Consultant
Bedrock Analytics **January 2020 – May 2020, San Francisco Bay Area**
• Bedrock Analytics is a Consumer Packaged Goods (CPG) sales and marketing analytics company.
• Deployed an umbrella algorithm using nationwide data that analyzed over **60 KPI trends** (ex. product growth over time, distribution growth gaps, all-commodity volume changes) of cereal companies in wholesale markets.
• Generated a presentation of my key insights for the **CEO** of Bedrock Analytics.

Accelerator Program
Haas School of Business, UC Berkeley **August 2017 – January 2018, Berkeley, California, United States**
• Pioneered a **Minimum Viable Product** (MVP) of a Web API Plugin that provides an alternative, eco-friendly product popup for online shoppers on major retailer websites.
• Leveraged the Berkeley community to carry out over **50 A/B testing's**, optimizing the user experience.
• Integrated over **10 pivots** as knowledge of market and customer grew.
• Presented our Pitch Deck to Patagonia.

INVOLVEMENTS

Central Florida Youth President
American Red Cross
• Spearheaded large **fundraising campaigns** for Measles and Rubella vaccinations, Nepal Earthquake assistance, and Liberty in North Korea (LINK)
• Organized Halloween safety programs, Care Packages for the needy, and CPR certifications for the Central Florida community.

PROJECTS

Enigma
• Constructed the WWII German encryption machine **"Enigma"** by creating a simulator that could take an input and certain configurations, encrypt it, and return the encrypted message.
• Developed with Java's String, HashMap, ArrayList, and Scanner **data structures** to handle string manipulation, data mapping, and file reading.

NYC Taxi Ride Duration Model
• Employed **Principal Component Analysis** (PCA) to split up Manhattan by geographical description.
• Implemented a **tree regression model** on one-hot encoded categorical variables (location, month, etc.), and built a predictive model of the length of a taxi cab ride.

San Francisco Food Safety Analysis
• Analyzed relationships between health scores and inspection rates of **4000 restaurants** with data of varying granularity from the San Francisco Department of Public Health
• Uncovered a **unimodal distribution** in the histogram of differences of health score over time, revealing that restaurants did not improve their health conditions after inspections.

Site of Surgery iOS Application
Co-Founder
• Launched a **pictorial editing app** to allow surgeons to create and mark images of the location of a procedure and print that out on a wristband to help prevent wrong-site surgery.
• Acquired over **50 downloads** worldwide.

Spam-Ham Email Classification System
• Applied Scikit-learn to build a **logistic regression classifier** that would analyze large Gmail datasets and classify certain emails as spam based on certain conditions (topic, keywords, capital letters).

HONORS & AWARDS

Cal Alumni Leadership Scholarship Award
University of California-Berkeley
1st Place State Competition (Sports and Entertainment Management)
Future Business Leaders Of America
AP Scholar with Distinction
CollegeBoard
Congressional App Challenge Winner
United States House of Representatives

COURSEWORK

Data Structures, Cognitive Science, Advanced Probability, Linear Algebra and Differential Equations, Macroeconomic Analysis, Microeconomic Theory, Multivariable Calculus, Econometrics, Principles & Techniques of Data Science, Mathematical Statistics in Data Science

SKILLS

Core Skills: Data Analysis, Machine Learning, Statistics

Industry Knowledge: Econometrics, Data Structures, Computer Vision, Algorithms, Statistical Modeling, Complexity Theory

Tools & Technologies: Python, SQL, TensorFlow, Stata, R, Java, Pandas (Software), Git, Tableau, API's

Other Skills: Leadership, Product Management, Teamwork, Public Speaking

Languages: English, Spanish