Ritam Chakraborty

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EDUCATION

University of California, Berkeley **Berkeley, CA**
Bachelor of Arts in Data Science *Expected Graduation: 05/2028*

- **GPA:** N/A
- **Relevant Coursework:** Foundations of Data Science, Structure and Interpretation of Computer Programs, Linear Algebra & Differential Equations
- **Student Organizations:** Space Enterprise at Berkeley

SKILLS

Languages: Python, SQL, Java, Javascript, HTML, CSS, Dart
Libraries: Pandas, NumPy, MatPlotLib, Seaborn, Sklearn, Tensorflow, Keras, Firebase, React, Next.js, Flutter
Developer Tools: Git, Anaconda, Jupyter Notebook, VS Code, IntelliJ, Android Studio

EXPERIENCE

Space Enterprise at Berkeley **Berkeley, CA**
Simulations Engineer *09/2024 – Present*

- Improved the organization's wind speed sampling technique for rocket launching simulations through finding correlations between the launch site average wind speeds at 47 different altitudes on 164 different days
- Formulated isolated linear regression models on each altitude interval to predict wind speeds for nearby altitudes
- Migrated new technique to OpenRocket's Java simulation engine to run hundreds of simulations per second

Image Recognition for Medicine Package Quality Control **San Jose, CA**
Independent Researcher *07/2023 – 07/2024*

- Preprocessed synthetic images of medicine packages and trained multiple image classification models on them
- Leveraged edge detection for feature extraction and transfer learning for optimizing deep learning algorithms
- Compared efficacies between Convolutional Neural Networks (CNNs) and common machine learning classifiers
- Published methodology and recommendations for future implementation in an academic journal as sole author

Bambuser **Stockholm, SE**
Project Management Intern *06/2022 – 07/2022*

- Consulted marketers to determine new features to implement for company's Live Video Shopping product
- Developed distribution plan and product announcements for company's new "Virtual Try-On" feature
- Pioneered a team to analyze and improve company's internal communication infrastructure for 150+ employees

PROJECTS

California Housing Price Prediction | *Python, HTML, CSS, Flask, Pandas, NumPy, MatPlotLib, Seaborn, Sklearn*

- Implemented a regression model to precisely predict housing prices in California trained on over 20,000 houses
- Engineered new features through generating data visualizations and finding correlations between other features
- Crafted a website with Flask backend allowing users to input housing data and receive the model's predictions

X (Twitter) Hate Speech Detection | *Python, NLTK, Tensorflow, Keras, Pandas, NumPy, MatPlotLib, Seaborn, Sklearn*

- Designed a Keras neural network to detect whether X posts should be removed for containing hate speech
- Employed natural language processing (NLP) techniques to conduct a sentiment analysis on over 32,000 posts
- Contrasted the accuracies of the deep learning classification model and a refined logistic regression model

Coefficient of Determination (R^2) Visualizer | *Javascript, HTML, CSS*

- Composed an educational website to visually demonstrate how R^2 is calculated for two variable data in statistics
- Constructed a user interface that enables users to plot points on a plane to be harnessed for linear regression
- Transferred website to a high school Advanced Placement Statistics teacher to teach R^2 to 100+ students per year

Skin Cancer Detection Mobile Application | *Dart, Flutter, Firebase*

- Built mobile application that determines whether user uploaded photos of skin lesions are potentially cancerous
- Activated an existing PyTorch image recognition model for a Flutter environment for cross-platform deployment
- Established a Firebase backend for user authentication and as a database of past images uploaded by users

Uno | *Java*

- Remade Uno complete with a graphical user interface (GUI) and game mechanics using custom animations
- Created local server and client handler so close by users using separate systems can play a single game together
- Instituted a multithreaded server environment to read/write data streams so UI accurately updates for all clients

Retro Game Chrome Extension | *Javascript, HTML, CSS, Firebase*

- Remastered classic arcade games in a small browser extension window for simple and convenient user access
- Devised artificially intelligent (AI) opponents from the ground up and manually refreshed animation frames
- Applied a Firebase backend for user authentication and to store high scores, user settings and a leaderboard