HARSHIL BHULLAR

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EDUCATION

University of California Los Angeles | M.S. Computer Science *September 2023 - Expected June 2024*
- GPA: 3.7/4.00
- Relevant Coursework: Big Data Analytics, Reinforcement Learning, Data Mining, Deep Learning

University of California Los Angeles | B.S. Computer Science *September 2019 - June 2023*
- GPA: 3.78/4.00
- Relevant Coursework: Database Management Systems, Machine Learning, Artificial Intelligence, Natural Language Processing

PROFESSIONAL EXPERIENCE

Data Engineer Intern *March 2022 – October 2023*
American Honda Motor Co. – Honda Racing Co. | *Santa Clarita, CA*
- Designed automated end-to-end custom **Python** API that used **Microsoft SSMS** and **SQLAlchemy** to greatly speed up prototype vehicle evaluation by digesting vehicle config data, generating vehicle state and catalog files, and evaluating the combined data through our aerodynamics model
- Devised data quality control pipeline to investigate and identify several instances of inconsistent time series data through **PySpark** and **Pandas**, allowing my team to resolve data source discrepancies and stream 4 times more reliable data
- Remodeled existing interpolation methods for primary telemetry time series data stream, utilizing cumulative integration and smoothing **Python** libraries, to improve data clarity and provide more accurate interpolation
- Integrated and standardized 3 streaming attributes into an **Azure Cosmos DB**, and then used **PySpark** to streamline attributes into **Confluent** topics
- Analyzed prototype car configuration data to quantify significant contributors between various configurations through **Pandas**; presented to my team using complex visualizations through **NetworkX** to effectively deliver key insights of my discoveries

Software Engineer Intern *June 2021 – September 2021*
Ferrissoft Technologies Inc. | *Princeton, NJ*
- Developed fitness client management web application prototype through **React** that allows users to track their clients' administrative information and client health statistics
- Constructed a **Python** script that connected to a **Neo4j** database through the Neo4j Python driver to automate monthly bulk emailing that clients can leverage for payment reminders
- Utilized **Cypher** query language to streamline client info storage, uploads, and modifications by setting up a **Neo4j** database management system
- Designed user-facing UI to enable users to insert and change client details seamlessly, using the **Neo4j JS API** with **node.js**

Research Assistant *June 2020 – August 2020*
UCLA HCI Xiang 'Anthony' Chen Lab | *Los Angeles, CA*
- Built prototype **React** webapp designed to track a Cardiologist's eye-attention while they analyzed CT scans for potential tumor nodules, using medical imagining toolkit API **ami.js** and eye-tracking API **webgazer.js**
- Analyzed existing **JSON**-formatted eye-attention data to pinpoint optimal logging frequency and sparsify data for visualization

PROJECTS

Improving Caption Similarity with GLIDE | *PyTorch, Google Colab* *September 2023 - December 2023*
- Employed and trained a fine-tuning **PyTorch** API on top of GLIDE's public model, employing denoising and resolution upscaling to improve the model by 64 points using FID score values.
- Increased accuracy in caption similarity to a noticeable degree for a specific subset of data within Google's **Dreambooth** dataset

Personal Twitch Dashboard | *Twitch API, next.js* *August 2021 - September 2021*
- Developed a Twitch dashboard that utilized the **Twitch API** and next.js to allow users to add their favorite streamers onto their dashboard and track when they were streaming online
- Employed the **Replit** database API to store streamer information, allowing my webapp to interact between Twitch and Replit to instantaneously update the dashboard when any of a user's saved streamers went live

CourseMe | *React, Firebase, node.js* *January 2021 - March 2021*
- Developed a Yelp-like **React** webapp where users can discover and query computer science courses and certifications, read other users' reviews, and create a personalized account to save, add, and rate courses as well as leave their own reviews
- Implemented **Firebase** database management to store user accounts and user reviews, using **node.js** within our **React** framework to communicate with the frontend site

SKILLS + CERTIFICATIONS

Languages: Python, SQL, C, C++, Bash, JavaScript, HTML, PHP, LISP, Haskell, Cypher

Libraries/Tools: Pandas, PySpark, PyTorch, Confluent, Azure, Cosmos DB, PyTorch, React, MongoDB, Git, Github, SQL SSMS, SQLAlchemy

Certifications: SQL for Data Science Certification, LPI Linux Essentials Certification