Allen Lau

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Developer Portfolio: https://lau-allen.github.io | LinkedIn: http://www.linkedin.com/in/allenlau2019

Education

The City College of New York August 2022 – Expected Graduation: May 2024
Master of Science, Data Science & Engineering | GPA: 3.97/4.00

Purdue University August 2015 – May 2019
Bachelor of Science, Mechanical Engineering | GPA: 3.80/4.00

Skills

Programing Languages: Python, SQL, R, MATLAB, MUMPS, C++

Data Science: Data Preprocessing, Exploratory Data Analysis, Feature Selection, Dimensionality Reduction, Modeling, Web Scraping, Natural Language Processing, Computer Vision, Big Data Horizontal Scaling

Development Tools: Google Cloud Platform (Compute Engine, BigQuery, Dataproc), Apache Spark, Docker, Git, Terraform, Prefect, dbt Cloud, MSSQL, MySQL

Projects & Experiences

Extraction of Forest Characteristics March 2023 – Present
- Partnered and collaborated with two research professors on utilizing Segment Anything (SAM), Neural Radiance Fields (NeRF), and COLMAP implementations to build a pipeline to transform, manipulate, and model forests and obtain a structural representation of characteristics like tree trunk volume
- Strengthened skills and knowledge of cutting-edge computer vision, segmentation, and neural network techniques, while leveraging tools like Google Cloud Platform and Docker

Sign Language Interpreter March 2023 – May 2023
- Leveraged computer vision (OpenCV, MediaPipe) to detect and track hands captured by a camera and machine learning algorithms (Scikit Learn, TensorFlow) to accurately classify the signed letters with greater than 90% accuracy

Food Insecurity Analysis May 2023 – May 2023
- Analyzed the food insecurity problem in NYC by using Apache Spark and Google Cloud DataProc to quickly and efficiently parse through 10 GB (9.2 million rows) of data in less than 2 minutes

Search Engine Aggregator April 2023 – May 2023
- Developed a search engine aggregator to enable refined secondary searches, reduce the bias of search results by using a keyword ranking algorithm, and remove ad results using Python (Requests, Asyncio, BeautifulSoup) and MySQL

Vaccine Efficacy Dashboard November 2022 – December 2022
- Created a dashboard with Python (Dash, Plotly, Pandas) and CSS/HTML to explore the effect of vaccines efficacies and the proportion of vaccine variants administered on the vulnerability to COVID-19 infection for a country's population

Hospital Mortality Classification Model November 2022 – December 2022
- Utilized python (Pandas, NumPy, Scikit Learn, statsmodels) to create a K-Nearest Neighbors model to predict patient mortality events with an accuracy of 88%, after applying techniques for feature selection like random forest

Predictive Model Implementation October 2019 – June 2022
- Managed the implementation of predictive models at hospitals that utilize patient data to predict outcomes to guide clinicians in their decisions to provide quality patient care and reduce negative patient and financial outcomes

Professional Experience

Technical Solutions Engineer, Epic Systems Corporation (Verona, WI) August 2019 – June 2022
- Partnered with three healthcare systems to identify and manage projects, ensuring successful implementation and operationalization of functionality with Epic's Electronic Medical Record (EMR) and clinical application
- Acted as a subject matter expert for the Wound Care app, which supports clinical workflows surrounding the intervention and treatment of wounds, to provide expertise and drive the success of the product
- Resolved and troubleshoot 500+ system build issues to maintain the system health of the EMR and to address the workflow concerns of stakeholders, while collaborating and communicating with a wide variety of functional teams
- Oversee efforts to streamline hospital system COVID-19 responses, including identification of affected patients, monitor ventilator utilization, and counter increased workload by creating executive and management dashboards
- Ensure successful reporting to the Centers of Medicare & Medicaid Services to prove compliance of regulatory standards and confirm safe, effective, and timely patient care