

JOYCE HU

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Education

University of California San Diego

Exp. June 2024

Bachelors of Science in Political Science: Data Analytics; GPA: 3.95

La Jolla, CA

- Minors: Data Science and General Biology
- Coursework and Topics: Multivariable Calculus, Linear Algebra, Statistics, Machine Learning for Political Scientists, Text as Data (NLP), Data Structures and Algorithms for Data Science, Data Science in Practice, Multiple Imputation in Political Science, Object-Oriented Programming, Data Structures and Algorithms, Optimization, Discrete Probability

Experience

Research Assistant

December 2023 – Present

J. Craig Venter Institute

La Jolla, CA

- Process scRNA-seq data, metadata collection, data curation, normalization and transformation, dimensionality reduction, nearest neighbor search, community detection clustering, marker gene identification, cell type annotation, and cell type matching
- Assist in single cell RNA-seq (scRNA-seq) bioinformatics pipelines

Machine Learning Fellow

July 2023 - September 2023

Launchpad.ai

- Collaborated with team to develop generative AI solutions for virtual fashion try-on imaging, combining expertise in computer vision, deep learning, and fashion technology
- Trained, fine-tuned, and conducted inference on state-of-the-art virtual try-on models such as DreamPose, LaDi-VTON, and HD-VTON to produce high-quality AI images and videos
- Used Stable Diffusion models such as Inpaint and ControlNet to capture and analyze user's input images
- Tested image segmentation models such as OpenPose and Segment Anything to improve image and video generation quality

Research Assistant (Data Analytics)

June 2022 – Present

U.S. Immigration Policy Center

La Jolla, CA

- Built a data pipeline to webscrape, preprocess, and update monthly immigration court database
- Ran and analyzed Difference-in-Difference models in R
- Cleaned and manipulated datasets with over 40 features and over 6500 observations using pandas in Python

Foreign Policy Data Analytics and Research

January 2023 – June 2023

UC San Diego

La Jolla, CA

- Assisted Ph.D. candidate in coding data for machine learning models on U.S. foreign policy data
- Cleaned survey data with over 2,000 observations and 300 features per year in R using *tidyverse* and *dplyr* libraries
- Created time series plots, density plots, and other data visualizations using *ggplot2*

Projects

Environmental Performance Classifier | *Tensorflow, Keras, Scikit-learn, Pandas*

- Constructed an environmental performance index using Principal Component Analysis and grouped countries by their environmental performance using KMeans Clustering
- Predicted environmental performance of countries using LASSO and achieved an R-square of 0.93 after cross-validation
- Created and optimized a deep learning model to predict country clusters and achieved a macro-f1 score of 0.84

San Diego "Get it Done" Pothole Dashboard | *Tableau*

- Created a dashboard in Tableau to inform San Diego council members of the effectiveness of the "Get it Done" app pertaining to potholes on the road
- Created visualizations for San Diego residents to view city responsiveness to their pothole fix-it requests, and to visualize how pothole trends may be influenced by rain, location, and time

Technical Skills

Languages: Python, R, Java, Matlab, Stata, SQL, bash

Technologies: Tableau, PostgreSQL, MySQL, Excel, Power BI

Other: Pandas, Numpy, Matplotlib, Seaborn, ggplot, plotly, Scikit-learn, Keras, Tensorflow, Beautiful Soup, Git