Levi Rankin

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EDUCATION

University of California, Santa Cruz   **Santa Cruz, CA**
B.S. Computer Science   *Sept 2021 – June 2025*
- GPA: 4.00
- Relevant course work: Object Oriented Programming, Data structures & algorithms, Calculus 1-3, Linear Algebra, Probability & Statistics.

CERTIFICATES

- **DeepLearning.ai** *TensorFlow Developer Specialization*
- **DeepLearning.ai** *Deep Learning specialization*
- **DeepLearning.ai** *Machine Learning specialization*

SKILLS

Programming Languages: Python, C++
Frameworks & Libraries: TensorFlow, Keras, OpenCV, Pandas, NumPy, scikit-learn, Matplotlib, seaborn, Tkinter
Statistics & Machine Learning: CNN, RNN, LSTM, ResNets, Autoencoders, Transformers, SVM, Decision trees, Linear & Logistic regression, Gradient descent, Regularization, PCA, Feature Engineering, Data analysis, Data Augmentation, Computer Vision.
Software Tools: Tableau, Git, Microsoft Excel, Google Sheets

PROJECTS & EXPERIENCE

Real-time Face Detection and Tracking System
- Captured a dataset of 30 images using OpenCV and enhanced it with Albumentations, applying transformations like cropping and flipping.
- Developed a dual-output deep learning model for classification and regression with TensorFlow's Keras, integrating VGG16 for feature extraction, and trained it using a custom loop with fixed learning rate decay.
- Deployed the trained model into a real-time face detection system using OpenCV, achieving accurate face localization.

Deep Learning Image Classifier
- Designed and implemented a convolutional neural network (CNN) using TensorFlow and Keras to categorize images as 'Happy' or 'Sad'.
- Conducted image preprocessing to filter out invalid images, normalize pixel values, and partitioned the dataset. Employed Matplotlib to visualize training and validation loss and accuracy trends.
- Utilized metrics such as Precision, Recall, and Binary Accuracy for model assessment. Demonstrated the model's capability by testing on individual images and achieving high accuracy on the validation set during training.

Energy Consumption Forecasting with XGBoost
- Engineered and utilized time-based features, such as hour, day of the week, and month, to enhance the predictive capability of an XGBoost model for hourly energy consumption.
- Conducted comprehensive data visualization with Matplotlib and Seaborn, revealing patterns and trends in historical energy usage.
- Assessed model performance on a test set, visualizing predictions against actual data and analyzing feature importance to understand key influencing factors.

Securities Analysis Tool
- Developed a comprehensive financial analysis tool in Python, utilizing the Tkinter GUI toolkit, to calculate key valuation metrics for both equities and fixed income securities, providing a holistic view of their financial health.
- Incorporated a range of formulas and models into the tool, including P/E ratio, DCF, CAPM, bond yield, modified duration, and yield to maturity, to enable accurate and reliable financial analysis.
- Built a user-friendly program that allows for easy calculation of key financial ratios and valuation metrics, incorporating user input prompts to customize the analysis for different securities and scenarios.

Covid Data Dashboard
- Organized 8 billion cells of global Covid-19 data in Excel for SQL data querying and exploration.
- Constructed SQL queries for analyzing death, infection, and vaccination percentages amongst the global population as well as individual continents and countries.
- Utilized tableau to setup a Covid-19 dashboard which displayed a global heat map showing countries and their infection percentages, a timeline chart for forecasting future infection percentages, and a bar chart showing the death count amongst the continents and income levels.