Jacob Pollard

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Education

University of California, San Diego

ECE, Data Science/Machine Learning, M.S.	**Fall 2020 - Fall 2021** (Expected)

GPA: 3.64/4.0

ECE, Computer Engineering, B.S.	**Fall 2017 - Spring 2020**

GPA: 3.57/4.0

Work History

Software Engineering Intern [link]	**June 2021 - Current**

Collins Aerospace, Chula Vista, CA

- Extract, clean, and systamitize manufacturing data to a new and learnable data architecture using pandas
- Perform feature engineering and model selection process, primarily using sklearn, LightGBM, & pandas, in order to forecast manufacturing order finish dates, resulting in test performance of $R^2=.8$
- Integrate LightGBM into the company's already existing Airflow data pipelining system for automated ingestion and transformation of up to date data from SQL for inference and prediction logging
- Deploy predictions to production by integrating them into the front end of an existing web application
- Create a Jupyter notebook where deployed model performance can be inspected using various standard metrics as well as visualizations to highlight model & dataset blindspots

Research Intern [link]	**March 2020 - August 2020**

Statistical Visual Computing Laboratory, UC San Diego

- Assist with surveying of literature with a focus on single view 3D reconstruction with specific attention paid to representation techniques & domain adaptive strategies
- Assist with the development of investigatory experiments with Pytorch aimed at utilizing synthetic datasets in learning to reconstruct objects in the real world

IT Service Desk Technician [link]	**July 2019 - March 2020**

IT Services, UC San Diego

- Communicate with customers via phone and email to gather information related to technical problems
- Troubleshoot and resolve issues related to customer network connectivity and account configuration
- Determine the cause of various technical issues and escalate to proper departments for resolution

Select Projects

Data Science Project [link]

Created a readable data analysis notebook analyzing a collection of bank marketing data
key tools: Python3, Pandas, Numpy, Scikit-learn, MySQL, Matplotlib, Jupyter, Anaconda

- Process data from csv to Pandas to local MySQL server in a pipeline, which cleans and modifies data for efficient storage
- Translate largely categorical data extracted as SQL entries from local server into processable one-hot Numpy arrays
- Train and compare a number of models with scikit-learn, and visualize results using Matplotlib and conduct analysis on feature importance while discussing hypothetical next steps given findings in a Jupyter Notebook

Android Application [link]

Developed an application which organizes a variety of data from vehicle sharing services such as Bird, Spin, and Lime onto application onto a single app in real time
key tools: Java, Android Studio, Google Maps API

- Manage GET and POST requests asynchronously to communicate with the various vehicle vendors (Bird, Spin, Lime) APIs
- Integrate data received from vendors into Google Maps API into an easily filterable and readable format
- Store user preferences and associated account information in a database

Language Proficiencies and Associated Tools

C/C++ - Fluent with C++ *STL*, proficient with *Valgrind* for memory checks, experience optimizing code to chip specifications, experience with *Cuda* for GPU acceleration, *QT* for GUI building, proficient managing compilation dependencies in *make*

Python - Fluent in *Pandas*, *Numpy*, *Matplotlib*, *Scikit-learn*, experience with *MySQL Connector* & *SQLAlchemy*, *Jupyter* notebooks, *Anaconda* environments, *Airflow* for job scheduling, and *Spark* for large data MR

Java - Experience with *Javafx* and *Android Studio* for GUI & application building, experience with event listeners for asynchronous web request handling

Linux/UNIX descendants - Fluent in *Bash*, experience scheduling tasks using *Crontab*, experience with *pdb*, *gdb*, *apt, htop,* piping and all basic cli functionality, proficient with *Kubernetes* for job management on clusters.