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: 3.46/4.0

ECE, Computer Engineering, B.S. **Fall 2017 - Spring 2020**
GPA: 3.57/4.0

Work History

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

Software Acceleration Project [link]
Created Cuda kernels to generate parameters for a Naive Bayes classifier using MNIST
key tools: Cuda, PyCuda, Python3

- Integrate Cuda kernels into Python using PyCuda
- Utilize Cuda streams to parallelize non dependent calculations
- Manage memory moves asynchronously for improved performance

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*, *Jupyter* notebooks, *Anaconda* environments, and *Pytorch*

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.

Relevant Coursework - Scalable Data Systems, Statistical Learning, Probabilistic Graphical Models, Computer Architecture for Software Acceleration, GPU Programming Operating Systems, ML algorithms, Data Structures, Image Processing, & Processor Design in SystemVerilog,