Joe Rickard

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PROJECTS

Dalvonic: This project started as an entry for HackCU 2016. It is an application that uses NLTK to provide a user with visual opinion analysis. Data is taken off Twitter, related by user ID and hashtags, allowing us to display the opinions of a set of users on one or more topics. This was written in Python using the Flask framework; CSS and JavaScript make up the front-end.

Linear Algebra Library: I've taken the time to write a C++ library to complete linear algebra functions for data analysis. While some already exist, I used this as an opportunity to further cement my understanding of the maths. With this Library I can take CSV inputs from a data set and end with node coordinates for use with the clustering algorithm of your choice. This allows a user to more easily visualize data similarity and distribution with a front end library such as D3.

Neural Network: I've worked with the N.E.A.T. genetic machine learning algorithm, attempting to optimize energy usage in heating a building. This work was done using C++. My models never reached a level of complexity where the results were usable, but the experience was valuable nonetheless. I am still interested in this problem, and intend to continue development on environmental control algorithms.

SQL Query Work: I've done freelance SQL Query production for a Boulder start-up aiding their new version release. This included writing new queries, updating old queries, and optimizing much of the existing code. This was done in mySQL.

COMPUTER SKILLS

Languages: C, C++, C#, Python, Bash, SQL, x86 Assembly
Github: /joerickard

EXPERIENCE

Front-End Performance Work — The Trade Desk
5/17-8/17 — Boulder CO
At the trade desk I worked on their embedded pixel for customers sites, ensuring reasonably fast load times regardless of partner server outages.

BLE and Language Model development — Toys2Life
10/16-6/17 — Boulder CO
I spent time working on an existing C# code base. This involved significant re-factoring and creation of new functionality. The product involves custom firmware for the BLE stack, leveraged to gather relative location data of discrete nodes. On top of this I developed language models to give nodes the ability to have contextually driven conversations with each other. I also developed a graphical UI for internal content creation, this was also in C#.

IT Administrator — Lab for Atmospheric and Space Physics
02/15-10/16 — Boulder CO
I worked to manage the in-house servers and maintain user access. This included regular backups, building new servers, migrating data between hardware, and interaction with a large VMware stack. The server-room housed racks for both database storage/access and computation.

EDUCATION

University of Colorado, Boulder, CO
Seeking Bachelors: Computer Science and Mathematics, expected Dec 2018