Joe Rickard

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PROJECTS

Voter targeting: Over the first half of 2018 I developed a relational database of Colorado voter information, census data, and election results. I designed a database to store this variety of information in a way that can be efficiently queried. My reason for this was to look for models of predicting the success of future candidates. I have been experimenting with semantic analysis of campaign strategies, specifically how certain tones of communication affect results in specific precincts.

HackCU: I have attended 3 on-campus Hackathons. At my first in 2017, I developed a web-app for semantic analysis of social media posts relating to some user defined topic. My team was awarded second place for this effort. At my second I developed a visualization of election district statistics and the database that provided them. At my most recent I expanded my second project to contain voter information. This large-scale database could be efficiently queried for an individual's relevant information. I was awarded first place.

Languages: C++, C#, Python, Bash, MySQL, PostgreSQL, MariaDB, MongoDB
Github: /joerickard

EXPERIENCE

Security Analyst Internship   Password Ping
8/18-present   Boulder CO
During this internship, concurrent with my semester of classes, I worked on an api to allow customers to check their users' credential integrity at login. This entailed collecting breaches and indexing the data into a MongoDB database. This database stores over five billion credentials, and was designed to keep the stored credentials secret even in the case of a leak. This service is also very performance sensitive, which posed more interesting challenges.

Statistical Analysis Internship   Deep Root Analytics
5/18-8/18   Washington DC
While at Deep Root I have improved their ability to target very specific audiences with TV ads. To accomplish this I combined existing deterministic data with semantic models of historic TV viewership. I also developed processes for pre-processing large incoming data streams, and developed new data sources.

Performance Optimization Internship   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. This work required extreme attention to edge case handling, as most of the errors my code resolved stemmed from rare conflicts with partner servers.

BLE and Language Model development   Toys2Life
10/16-6/17   Boulder CO
This position involved significant re-factoring and feature addition to an existing c# code base. The code processed signals from BLE radios in dolls, providing the relative location and orientation of radios in the network. On top of this I developed contextually dependent conversational models for the dolls.

EDUCATION

University of Colorado, Boulder, CO
Seeking Bachelors in Computer Science and Mathematics, expected May 2020
Notable Courses: Performant Linear Algebra, Computational Linear Algebra, Concurrent Programming, Data Analysis Algorithms, Data Statistics, Database Systems