[Steven Wu]

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Education

Finishing 4th year Bachelor of Mathematics Honours:
Computational and Applied Mathematics and Statistics (Co-op Option) ***2010 - Present***
Carleton University, Ottawa ON

- CGPA of 10.62/12 (Letter Grade: A-)
- 2010, 2011, 2012, 2014 Dean's List
- 2010, 2011, 2012, 2013 Renewable Entrance Scholarship
- Expected to graduate May 2015

Availability

- Available from approximately late April until late August (leaving for graduate studies)

Skills & Technologies Used

- Comfortable With: Python, MongoDB, R, HTML
- Have Learned: JavaScript, Node.js, C, C++, Java, SAS, MINITAB, SQLite, Tornado, Flask

Work Experience

Teaching Assistant
Carleton University — September 2012 – Present

QA Automation Co-op
360pi — May 2013 – May 2014

Campus Tour Guide
Carleton University — September 2012 – September 2013

Quality Assurance Analyst Co-op
360pi — May 2012 – September 2012

Tutor
Self Employed — September 2008– September 2013

Projects

Hobby/Spare Time

Forum Scraper for Sentiment Analysis *February 2015 – Now*

- Prototype of my NSERC thesis, which can currently crawl RealGM's NBA Draft board for each post in each topic, creating representations of posts, threads, and users in MongoDB
- Flask web UI allows for interface to data, to see three views about a given topic (a player entering the draft):
  - their relative buzz score (how often are they mentioned compared to the average player),
  - all posts directly mentioning the player
  - the most common words associated with the player along with frequency of the word

Data Analysis for CIS Men's Basketball *September 2013 – Now*

- Successfully approached client to engage interest, extract requirements, design system, and build implementation using Python and MongoDB individually
- Used BeautifulSoup to scrape data for every team for the past 4 seasons, including team line-up information, season statistics, and play-by-play data
- Developed AI algorithms that fully automates the cleaning process of a broken play-by-play that contains erroneous substitutions and timestamps, and guarantees exactly five players for each side of the court for every play with close approximation to box score minutes
- Developed metrics to quantify how much each game is mutated after algorithm is run to be able to explain to the client how bad the current data is, and developed a metric comparing minutes from the box score vs. play-by-play to justify the correctness of the algorithm
- Developed numerous scripts to perform various auxiliary tasks: check logical fallacies of a given play by play, standardize all names in each play-by-play to the closest match on the team's roster, run workflows of tasks and storage, etc.
- Can now access the following metrics: # missed layups, # tip-ins, unadjusted +/-, adjusted +/-, % of boxscore stats obtained within a specified score margin, % of boxscore stats obtained in the 4th quarter

@astro_tweet_bot – twitter.com/astro_tweet_bot *April 12th-13th 2014*

Created for the 2014 NASA Hackathon – Alert! Alert! space challenge, which asked for a centralized location for sky enthusiasts to subscribe to for updates on observable sky phenomena Crawls reddit and passively posts the most popular images of sky/space, and actively (every minute) checks for tweets @ it that specify either 'sky' OR 'satellite', plus additional parameters, tweeting back at you the coolest sky phenomena going on over your head OR the brightest satellite flying over your head

- Identified sources of useful information, tonightssky.com and spaceweather.com/flybys, and developed crawlers that take the website's information depending on the user's request
- Worked with two other students to build and deploy live in less than two days time using Python and Flask for the application logic, hosted on OpenShift

Maple Output Parser *June 2014*

- Created a script in Python to help automate repetitive error prone task of analyzing and categorizing factored polynomial output from Maple

Work/School

AI Snake *February 2015*

- Individual class project for artificial intelligence course that required implementation of a variant of the popular snake game, where the snake must drive itself using uninformed searches (breadth first search, depth first search) and A* search
- Designed state space and coded implementation in Python with a command line UI, with reporting enabled for comparison between the searches
- Configurable grid dimensions, number of obstacles the snake must avoid, number of iterations before being finished, and search type

CFL Data *February 2015 – Now*

- Colleague wanted CFL play-by-play to analyze 3rd down plays that weren't punts
- Created system in Python to scrape the two season's worth of publicly available game data, and created a quick script to give him the .csv of plays he was looking for

QA Tool for 360pi *December 2013 – May 2014*

- Oversaw implementation of design for cloud-based tool implemented in Python to facilitate daily quality assurance of our extractors, learning HTML5 & CSS3 in tandem with another co-op student who engineered the back-end
- Created script to report on historical data generated from the tool
- Improved upon the API layer between our main business logic & the tool, by implementing capability of on-demand specific job creation to complement the previously sole method of randomly creating jobs, complete with unit tests using mock
- Took over all responsibilities, such as: data modeling (designing new schema, managing our Mongo database), application logic (handling the new on-demand type jobs), and UI (new views for the workers, as well as updating the reports display)

Volunteer Activities

- Head of Logistics and Volunteers for CUMC 2014 which was hosted at Carleton University
- Organizer for OTTAnalytics 2015 at Carleton University, a conference about hockey analytics attended by over 200 people
- Co-op Peer Helper for the 2012-2013 academic year
- Spoke at CUMC 2012 about mathematics of blackjack and at CUMC 2013 about advancements of computational statistics in basketball