Samuel Bretz
Software Engineer

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Work Experience

The Home Depot / Software Engineer Intern

Jan 2018 - May 2018, Search Components

Constructed data pipeline for converting raw user search data into training data for machine learning models.

Utilized the seq2seq neural machine translation method to create machine learning models in Python 3 which realistically represent human error in search query spelling.

Developed generative natural language processing models using Tensorflow and OpenNMT which gave the potential for infinite creation of training data for the spellchecking engine.

Technicolor / Software Engineer Intern

May 2017 - Aug 2017, Connected Home

Built a Go web application that handled registration and control of Technicolor's Docsis modems, routers and set top boxes.

Traffic data was collected and stored in a noSQL database (couchBase) for analysis related to congestion control.

The controller can handle up to 1,000,000 requests per second with no performance loss via multithreading.

Vernacular Labs / Software Engineer Intern

Aug 2016 - Dec 2016

Developed a Ruby on Rails media monitoring web application that crawls a set of websites created by the user, parses the data and sends chosen sections to user managed email groups.

Configured and managed a production grade Ubuntu 14.04 web server and utilized PostgreSQL for data storage and manipulation.

Education

Georgia Institute of Technology

College of Computing

Bachelor of Science, Computer Science Candidate.

Concentrations in Artificial Intelligence and Information Systems.

Projects

FyveBot / HackIllinois 1st Place

Created a chatbot application using Microsoft's chatbot framework that allows users to quickly learn new concepts.

Leveraged 6 news and web APIs and a microservice architecture to RESTfully gather data and summarize it using NLP techniques to 2000 characters or less and present it to the user.

My team's project won Microsoft's 1st place prize and was selected as 1 of 12 U.S. teams to compete in the United States Finals of the Microsoft Imagine Cup.

Q-Learner / CS 4651 ML for Trading

Implemented the Q-learning algorithm to train an agent to trade stocks based on historical pricing and technical indicators.

Ingested data from csv source files and manipulated it using the pandas library and Python 2.

In backtesting with a year long test period and 3 technical indicators, the agent outperforms the S&P by 4% on average trading AAPL, GOOG, NFLX and IBM.

Skills

Expert ●●● Proficient ●● Previous Experience ●

Python (2/3) ●●● **Java 8** ●●● **C/C++** ●● **Go** ●● **Ruby** ●● **SQL** ●● **JS** ● **Swift** ● **HTML5** ●

Git ●●● **Sci-kit Learn** ●●● **Pandas** ●●● **Numpy** ●●● ***nix** ●● **Tensorflow** ● **GCP** ●