NAVRAJ (NAVIE) NARULA

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DATA SCIENCE PROJECTS

Detecting Fake News Headlines

Created binary questionnaire with open-ended forum asking participants to differentiate between real and fake news headlines. Visualized and reported on collected results against KNN classifier built using R.

Generating Poetry with Markov Chains

Devised baseline and advanced algorithm to generate coherent text based off haikus in Python, conducted 74-participant survey that demonstrated an error rate of < 30% on selected outputs.

Analyzing Language in Eating Disorders

Utilized LIWC to obtain pertinent categories in reddits related to anorexia and obesity, plotted correlations using R. Built classifiers using sci-kit learn, returing accuracies of 90% for anorexia-based texts and baseline for obesity-based texts.

Localizing Travel via a Web Application

Built website allowing users to create profiles and list ideal travel destinations using Python, SQL, HTML, and CSS. Displayed data based on user-generated content.

SKILLS

Programming

Python - Java - C - HTML - CSS - JavaScript - R - SQL - Git - Flask - D3.js - Shell - pandas - nltk - AWS - GCP - ElasticSearch - Praat

Research/Concepts

Natural Language Processing - Speech and Audio Evaluation - User Experience Survey Design - News and Social Sharing - Technical Documentation

Languages

English - Thai - Punjabi

Leadership

Community Chair - Women in Computer Science at Columbia University

EXPERIENCE

Software Engineering Intern   June 2018 - Aug 2018

Axios - New York, NY

Built data pipelines to gather platform engagement data using Python and AWSGlue as a storage framework for ETL tasks. Created and deployed machine learning models with AWS SageMaker. Worked closely with the Director of Data Engineering and received recognition from the CTO upon presenting work.

Artificial Intelligence Researcher   Sept 2017 - Dec 2017

Creative Machines Lab - New York, NY

Designed and implemented a persistence algorithm and an autoregressive model using time-series forecasting to predict future movements of a soft, artificial muscle. Visualized muscle movements pertaining to each time second and load force for continuous datasets.

Software Engineering Intern   June 2017 - Aug 2017

Quid - San Francisco, CA

Built and deployed website to display info pertaining to Quid's backup system using Docker, Flask, SQLAlchemy, and Python. Examined and unpacked contents of API to create mapping and define settings for indices on Elasticsearch. Wrote test cases to automate checks for an infrastructure engineering task. Presented my work and received recognition for delivering outputs of my code to a client.

Teaching Assistant   Sept 2016 - May 2017

Columbia Engineering - New York, NY

Helped students understand control flow, functional design, and complex libraries using Python. Selected as 3 of 10 course assistants to lead lab lectures.

Digital Products Intern   May 2016 - July 2016

MIT Press - Cambridge, MA

Implemented functions in Python to automate ePub creation, validated parsing errors across XML/HTML documents, bookmarked PDF textbook files, worked with Oxygen XML Editor and Sigil-Ebook platform to automate test cases.

Data Storytelling Researcher   Jan 2016 - May 2016

BU Hariri Institute for Computing - Boston, MA

Designed taxonomy and implemented a relational database in MySQL Workbench to store info on criminal case reversals, worked with faculty member to deliver report on functionality of search and how to perform robust queries, received funding to attend NICAR conference in Spring 2016.

EDUCATION

Columbia University, New York, NY   May 2018

Master of Science, Computer Science and Journalism

Thesis: Detecting Human Emotion in Speech and Audio Inputs [Software open-sourced on GitHub: https://bit.ly/2OJ6eme]

Boston University, Boston, MA   May 2016

Bachelor of Science, Computer Science and English Education