Richard Sear

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Education

BACHELOR OF SCIENCE | MAY 2021 | THE GEORGE WASHINGTON UNIVERSITY

- Major in Computer Science with Minors in Physics and Mathematics
- University Honors Program completion | GPA: 3.90 | Summa Cum Laude | Tau Beta Pi Honor Society

Work Experience

RESEARCH ASSISTANT | GWU DYNAMIC ONLINE NETWORKS LAB **SEPTEMBER 2018 – PRESENT**

- Working with Dr. Neil Johnson's research team, studying many-body physics of user behavior in online anti-vax groups
- Performing dynamic Latent Dirichlet Allocation unsupervised topic modeling on text data
- Developed open-source Python package for data bookkeeping and ML experiments: https://github.com/gwdonlab/ogm
- Created extensive framework of code for constructing hyperlink networks given data from several social media platforms
- Contributed to works published in *IEEE Access* and *Scientific Reports* – see my website's "Publications" page

INDEPENDENT CONTRACTOR | CLUSTRX LLC **MAY 2020 – PRESENT**

- Performed supervised ensemble ML experiments for hate classification and analysis (based on BERT and RoBERTa models)
- Designed robust software pipelines for capturing data from social media platforms
- Helped design and administrate extensive relational database of collected hate speech

STUDENT RESEARCHER | JOHNS HOPKINS HLTCOE SCALE PROGRAM **MAY 2019 – AUGUST 2019**

- Utilized TensorFlow to analyze effects of reduced-size training sets on NER and topic identification tasks
- Iteratively fine-tuned Google's BERT model using a series of language processing tasks

CHIEF TECHNOLOGY OFFICER INTERN | BUCHANAN & EDWARDS, INC. **MAY 2018 – AUGUST 2018**

- Trained machine learning model to identify primary emotions with ~15% average error rate (Microsoft CNTK for Python)
- Delivered Azure webapp built with Flask to analyze uploaded images and videos

Projects

See more on my website's "Class Projects" page

- Development of an app that uses machine learning to help visually impaired people identify objects — August 2020-May 2021
- Construction and maintenance of a course website: https://gwu-apsc1001.github.io/ — August-December 2020
- AWS/Arduino IoT bot board game player — March-April 2020
- Implementation of container manager system in the xv6 operating system — November-December 2019

Skills & Abilities

TECHNICAL SKILLS

- Software: Visual Studio Code; Jekyll; AWS; Git; Arduino; Azure; Adobe InDesign; MS Office
- Proficient in Python, Java, C, LaTeX; experienced with PHP, MySQL, PostgreSQL, HTML, CSS; familiar with R, MATLAB, Bash

LEADERSHIP/TEAMWORK

- Learning Assistant, Intro to Engineering for Undeclared Majors (APSC 1001) — August-December 2020
- Layout Manager, GW Undergraduate Review — September 2017-May 2021