Tyson Pond

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Education

University of Vermont **Burlington, VT**
M.S. Mathematics (GPA: 4.0/4.0) *Aug. 2018 – May 2020*
- Recipient of John Kenney Award as the top mathematics graduate student
- Relevant coursework: Convex Optimization, Bayesian Statistics, Linear Models

B.S. Mathematics (GPA: 3.9/4.0; magna cum laude) *Aug. 2014 – May 2018*
- Minors in computer science and statistics
- Undergraduate Teaching Assistant for Fall 2017 Numerical Analysis
- Relevant coursework: Data Structures & Algorithms, Machine Learning, Evolutionary Robotics, Numerical Analysis, Statistical Methods (applied, theory), Probability (applied, theory)

Research & Projects

Ice cream data dashboard ([App](App), Github) **Dec. 2020 – Jan. 2021**
- Assessed product performance and identified common complaints for ice cream companies – potentially increasing customer retention – by parsing customer reviews with spaCy and applying NLP methods: n-grams, sentiment analysis, and topic modeling
- Collected all customer reviews (20,000) from four company websites using Python and Selenium for web scraping
- Created interactive visualizations – allowing for product comparison and trend analysis – using Highcharts and R, and built a web application using R Shiny

Twitch tastes ([App](App), Github) **Oct. 2020 – Nov. 2020**
- Built a collaborative filtering recommendation system to suggest live streamers to Twitch.tv users, potentially increasing daily hours watched
- Collected data on 280,000 user-streamer follows, via the Twitch API, to train our model on
- Built a web application and RESTful API using Flask and deployed with Heroku

Information flow in social networks, M.S. thesis (Journal article) **Sep. 2018 – Apr. 2020**
- Developed a novel measure and model of written information flow in online social networks
- Estimated that a user's text can be predicted with up to 95% accuracy, using only their social ties' texts
- Utilized a Linux cluster and Python to perform large-scale simulations (generating 100GB of data) and collect 30 million tweets to validate our proposed methodology
- Led a team of five international researchers to **publish** our results

Skills

Languages: Python, R, MATLAB, SQL, HTML, CSS, JavaScript
Libraries: Python: pandas, NumPy, Matplotlib, Plotly, NetworkX, Selenium, Flask, NLTK, spaCy, scikit-learn, TensorFlow, Keras || R: tidyverse, Shiny || JavaScript: D3.js, Highcharts
Tools: Git, LaTeX
Analytical: social network analysis, NLP, recommender systems

Experience

University of Vermont **Burlington, VT**
Graduate Student Instructor *Aug. 2018 – May 2020*
- Independently taught undergraduate math courses to 134 students over four semesters
- Planned lessons, assisted students at office hours, and evaluated student work