

Craig Erickson

Work Experience

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Amazon

Research Scientist

Alexa AI – Web Information

August 2022 – present

Hamline University

Visiting Lecturer, Computational Data Science and Mathematics

Department of Mathematics

September 2018 – August 2022

Grand View University

Assistant Professor of Mathematics

Department of Mathematics & Computer Science

August 2014 – May 2018

Computer skills

Programming Languages and Software: Python (Jupyter notebooks, Pandas, numpy, scikit-learn, matplotlib/seaborn, streamlit), R (RStudio, tidyverse), SQL, Tableau, Mathematica, MATLAB, SageMath, \LaTeX , Beamer, R Markdown

Projects

- **Fan effect on NBA games:** Made use of the natural experiment provided by the 2020 “COVID Bubble Games” to investigate what—if any—effect fans have on the outcome of NBA games. Wrote Python program to scrape 20 seasons of extended boxscore data from Basketball Reference and carried out statistical analysis in R.
- **Mapping Minneapolis Fire Calls:** Accessed Minneapolis Fire Department calls from Open Minneapolis data portal. Used Python and Streamlit to create an app ([available here](#)) with two types of maps: (1) Plotting the individual locations of confirmed fire calls in Minneapolis and (2) Choropleth maps showing the call counts by fire district, fire station area, or neighborhood, all filterable by date range.

Leadership Highlights

- Contributed to program review and revitalization of Data Science Major and Math Major, Hamline, 2021 – 2022.
- Codeveloped Hamline University’s Computational Data Science major, Spring 2019.
- Codeveloped Grand View University’s Business Analytics major, Fall 2017 – Spring 2018.
- Co-organized Machine Learning reading group (of faculty and students) at Grand View, Fall 2017 – Spring 2018.
- Member of the Student Success Collaborative (SSC) software implementation Leadership Team, 2017 – 2018, including: Chair of the “Success Marker Development” Group, Member of the SSC software “Workflow Development” Group.
- Appointed by the university president to participate in Institutional Planning Initiative, Spring 2017, including: One of eight faculty member participants in a “Direction Setting” retreat with the GV Board of Trustees.
- Co-advised weekly prep sessions for the ACM programming contest, Fall 2016.

Teaching Experience

*Courses I developed or redesigned.

25 distinct mathematics and data science courses taught as sole instructor, including:

- Intro. to Programming (Python)* ◦ Programming in MATLAB* ◦ Intro. to Computational Data Science ◦ Statistics
- Statistical Machine Learning* ◦ Discrete Computational Structures* ◦ Computational Data Science Capstone* ◦ First Year Seminar (Uses and Misuses of Algorithms)* ◦ Topics in Graph Theory* ◦ Mathematical Modeling ◦ Numerical Analysis

Education

Iowa State University, Ph.D. in Mathematics

Advisor: Leslie Hogben. Dissertation title: Sign patterns that require eventual exponential nonnegativity

Ames, IA

2009 – 2014

Minnesota State University, M.A. in Mathematics

Advisor: In-Jae Kim. Thesis Title: On nilpotence indices of sign patterns

Mankato, MN

2007 – 2009

Drake University, B.S., Major: Mathematics, Minor: Music

Des Moines, IA

2004 – 2007

Research Accomplishments

Publications: 10 peer-reviewed publications in international Linear Algebra and Graph Theory journals.

Conference Talks: 10 invited talks at regional, national, and international conferences.

Workshops: Fully funded participant at 4 research workshops leading to collaborations and publications.