

# Craig Erickson

✉ cerickson.phd@gmail.com ☎ (515) 230-8694

📄 cerickson30.github.io

🌐 www.linkedin.com/in/CraigJErickson

## Experience

### Hamline University

Visiting Lecturer, Computational Data Science and Mathematics

### Department of Mathematics

September 2018 – present

### 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.
- **Purple States of America:** Used Python to combine county-level presidential election results for 1960 through 2020 from multiple sources with geographic data, created choropleth map coloring each county using RGB color calculated based on proportion of votes for each candidate in that county. Created Streamlit app ([available here](#)) to share the results.

## 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.