Writing an Abstract

Based on slides prepared by Dr. Martin Leach, Department of Meteorology and Climate Science, San Jose University

What is an abstract?

A Bayesian Model for the Prediction of United States Presidential Elections*

Brittany Alexander[†]

Advisor: Leif Ellingson[‡]

Department of Mathematics and Statistics, Texas Tech University

Abstract

Using a combination of polling data and previous election results, FiveThirtyEight successfully predicted the Electoral College distribution in the presidential election in 2008 with 98% accuracy and in 2012 with 100% accuracy. This study applies a Bayesian analysis of polls, assuming a normal distribution of poll results using a normal conjugate prior. The data were taken from the Huffington Post's Pollster. States were divided into categories based on past results and current demographics. Each category used a different poll source for the prior. This model was originally used to predict the 2016 election, but later it was applied to the poll data for 2008 and 2012. For 2016, the model had 88% accuracy for the 50 states. For 2008 and 2012, the model had the same Electoral College Prediction as FiveThirtyEight. The method of using state and national polls as a prior in election prediction seems promising and further study is needed.

1 Introduction

A presidential election happens in the United States every four years. The winner of the election is decided by the 538 electors in the Electoral College. Under the current system, most of the states choose their electors based on the winning candidates of the state. Most of the states (like

What is an abstract?

- An **abstract** is a brief summary of a larger work

- It highlights the major points covered

- It concisely describes the content and scope of the work

- This helps the reader quickly determine the purpose of the work

General information:
- 100-350 words
- Accompanies research papers/articles
- Used for presentations at conferences

Structure of a Research Article

- ***Abstract***

- Introduction

- Methods

- Results

- Discussion

It comes first, but it is typically written last!

Why write an abstract?

- Provides an overview of your work

- Highlights and/or sells your work

- Convinces a reader to obtain your article or to continue reading

- For a talk, helps organizers to group it with similar papers

A good abstract should…

- Motivate (why you did it)

- State the problem (what you did)

- Describe the methods used (how you did it)

- Highlight the results (what you found)

- Discuss implications (what it means)

Informational vs. Descriptive Abstracts

Informational abstracts…

- Summarize the major sections of a report
- Highlight essential points and findings
- Allow the reader to decide whether they want to read the report

Descriptive abstracts…

- Contain less detail
- Do not summarize results and conclusions
- Introduce the subject to readers who must read the report to learn the results

Our disciplines typically use informational abstracts.

Six sentence idea

A simple prescription for writing an informational abstract:

- Introduce the topic

- State the problem

- Summarize what's missing in current literature

- Explain your idea/approach

- Explain your methods

- Discuss the key impact of your work