To create fairness and accountability in the use of government decision making algorithms

Owen Churches
Churchill Fellowship, 2019

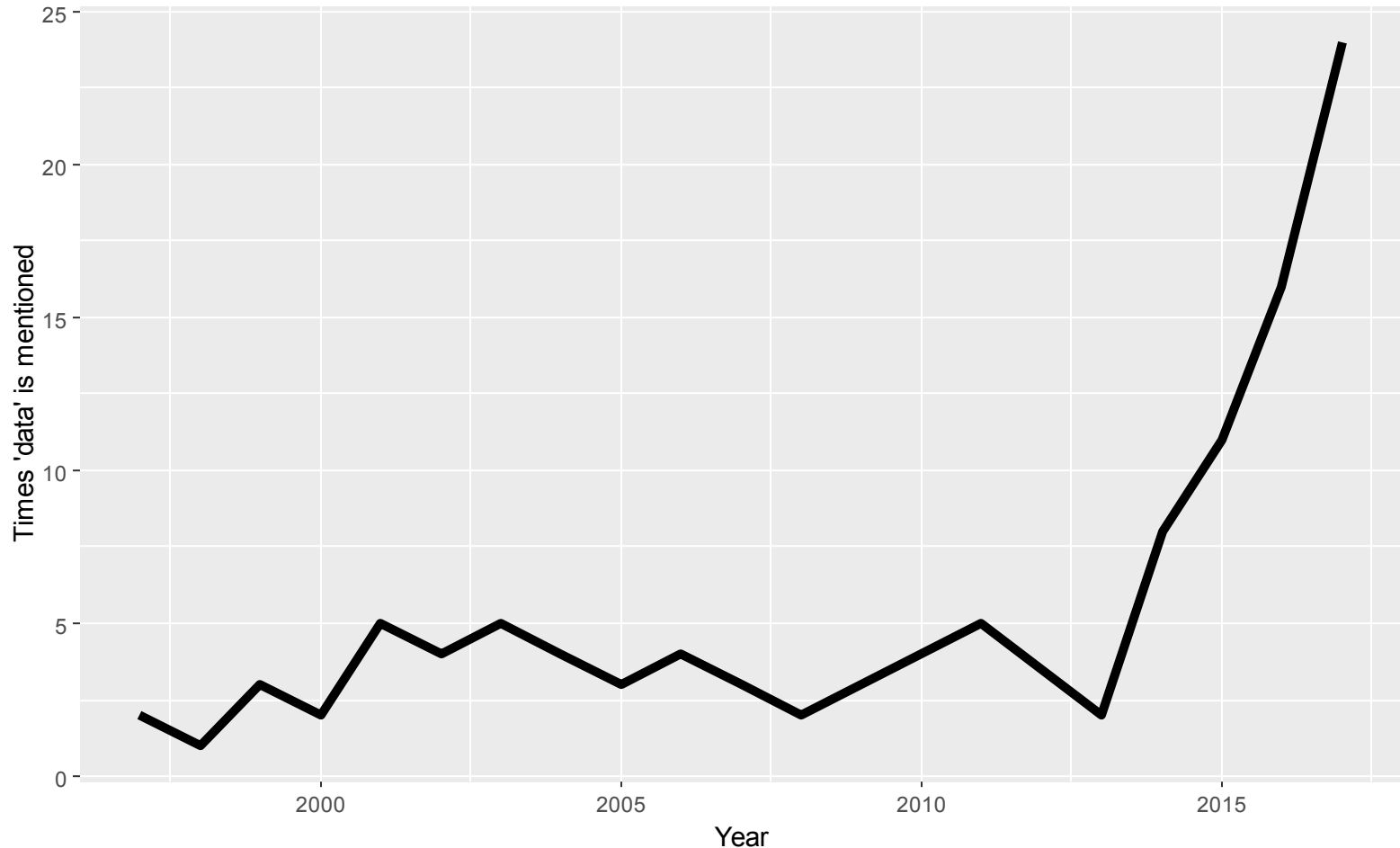@OwenChurches   Owen.Churches@sa.gov.au

Why did I apply?

- I started in the public service mid 2017

- It felt like "data" was a big deal

Why did I apply?

Count of times 'data' is mentioned in statements by members in Australian Hansard from 1997 to 2017

data from https://www.aph.gov.au/Parliamentary_Business/Hansard/Search

Why did I apply?

- This was exciting
  - It's a good time to be a statistician in government

- There are risks
  - What if data use in government has the same efficient but unethical approach that characterizes silicon valley tech?
  - What if no one is actually interested in data, and this is a performance?
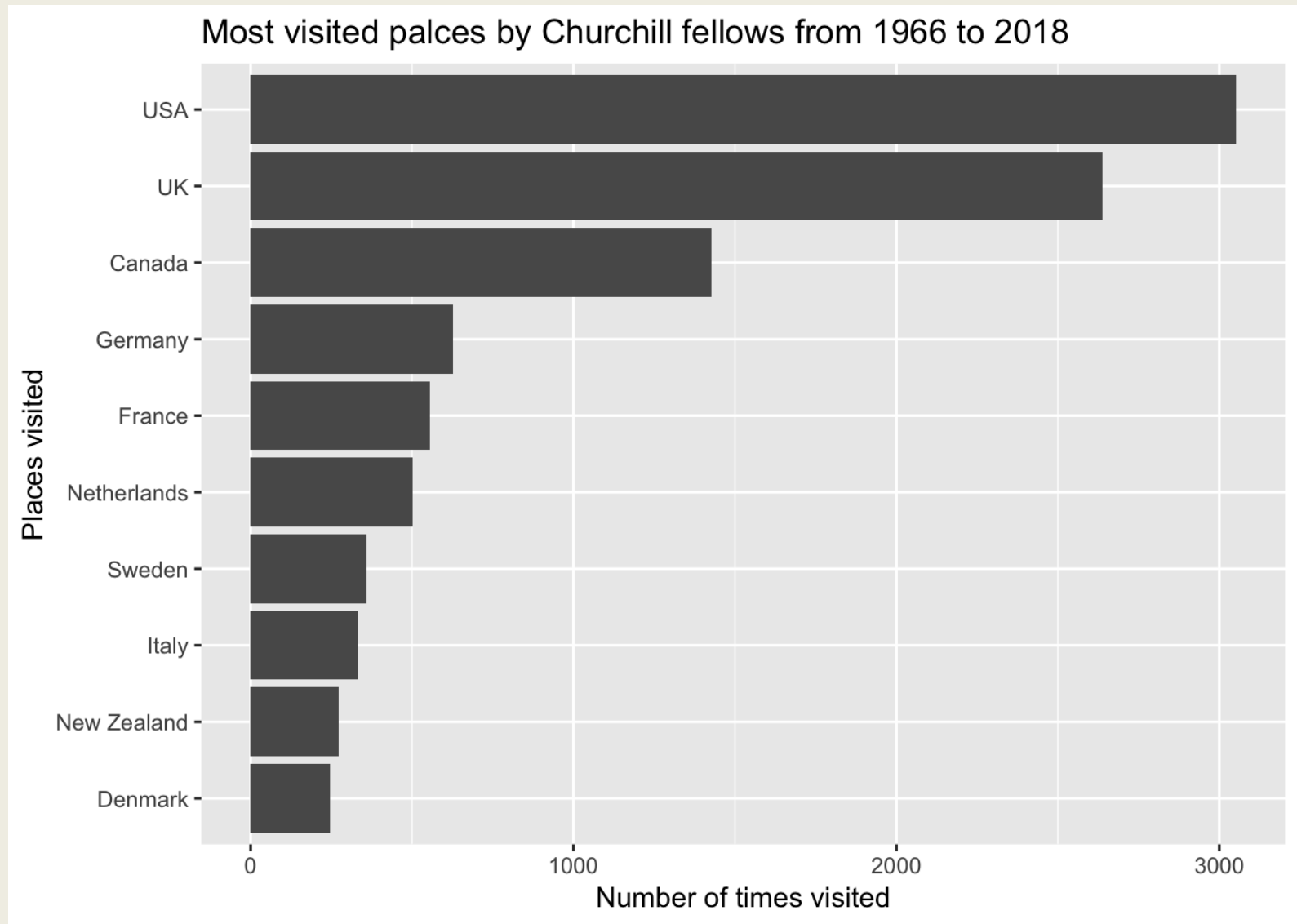
What is the Churchill Fellowship?

- If you're thinking about applying, there's lots of information available at:
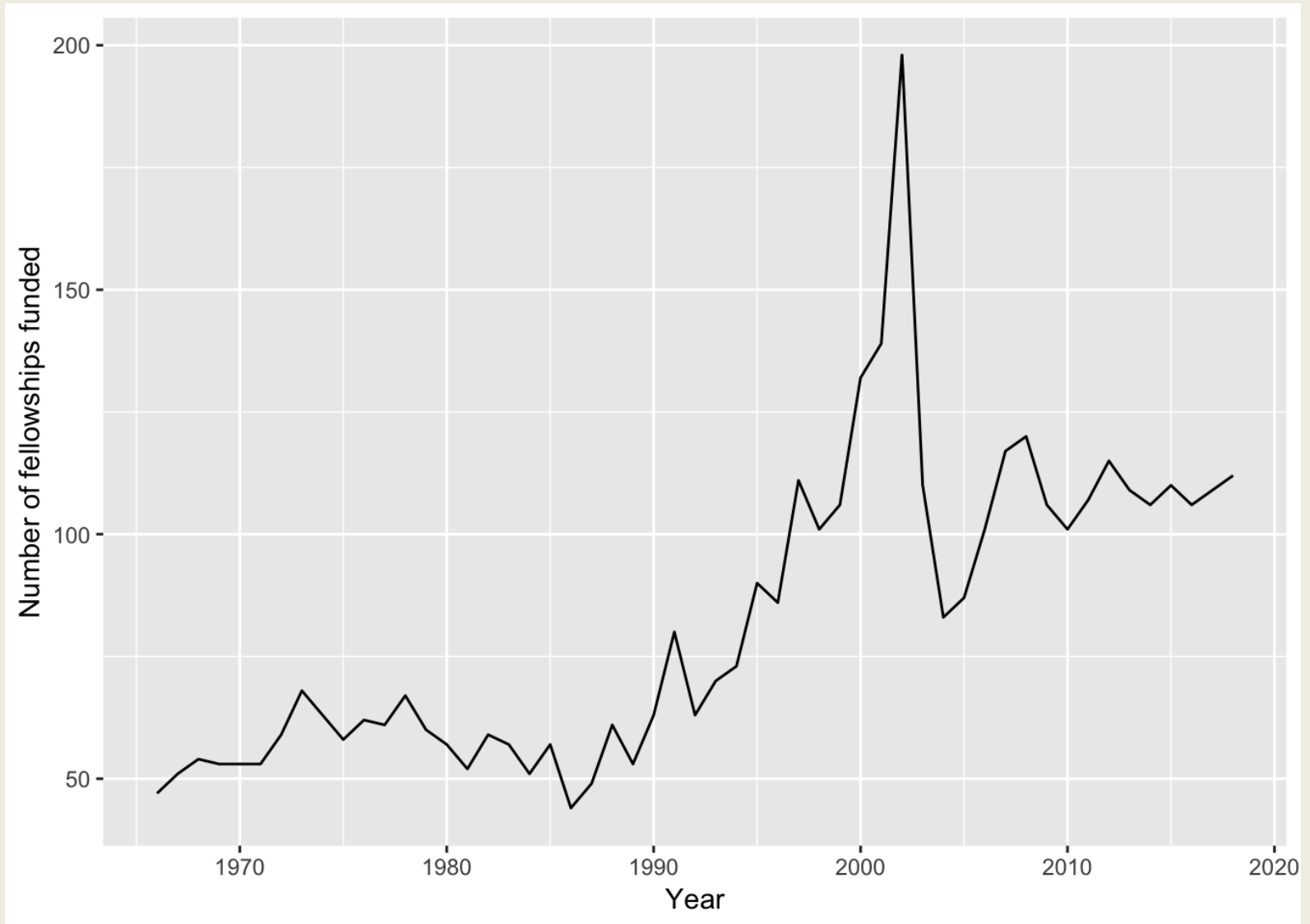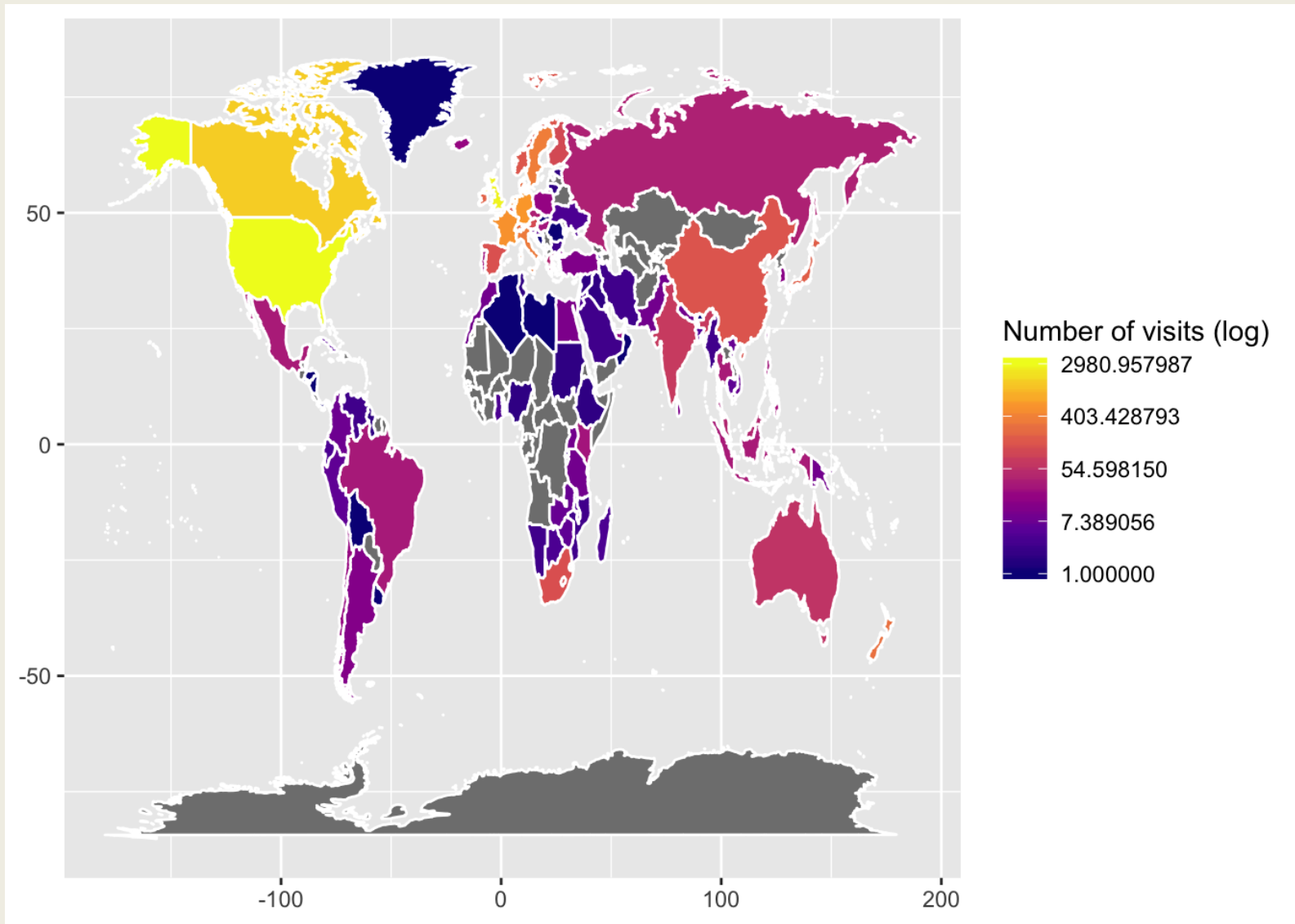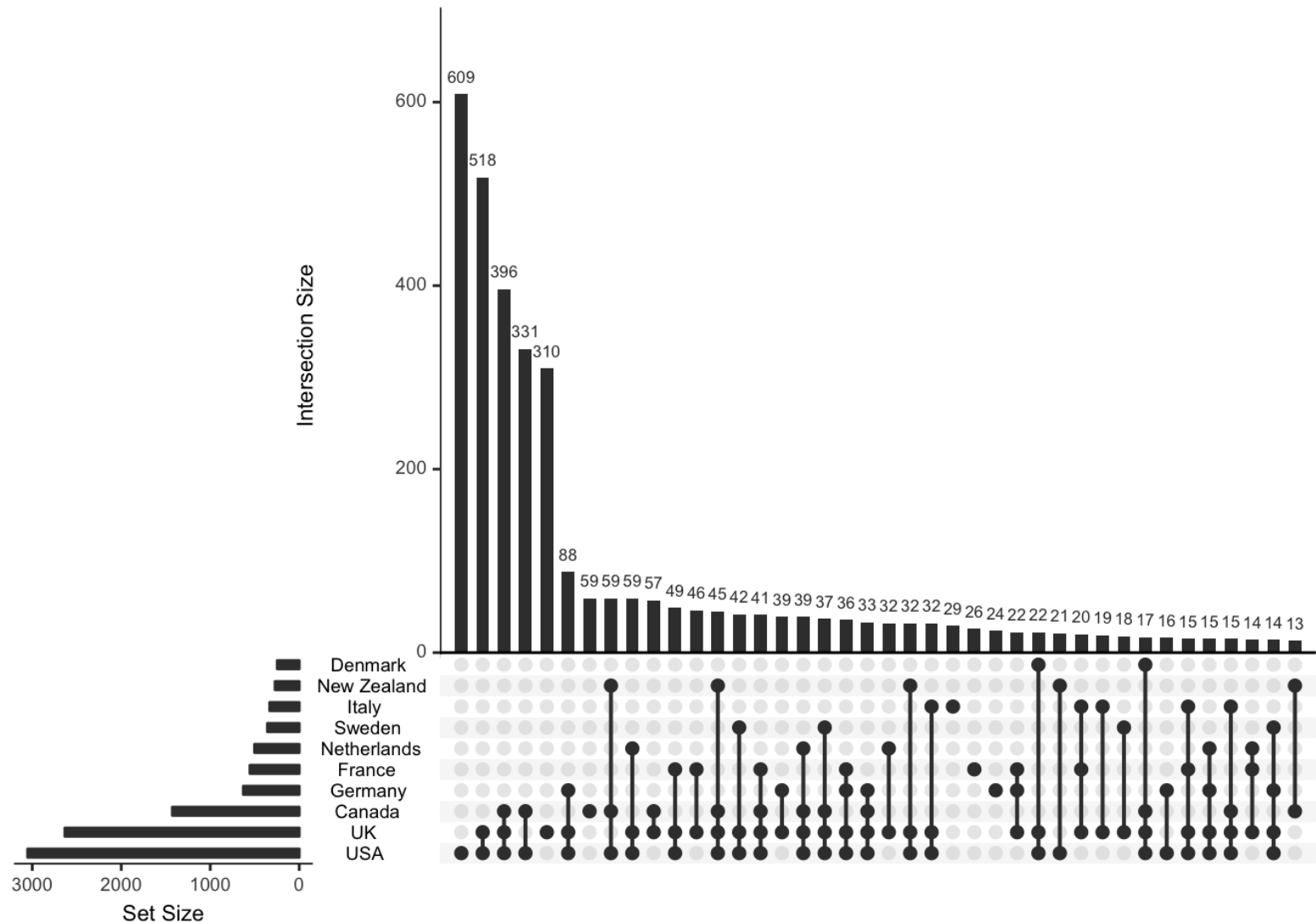
  https://www.churchilltrust.com.au/

What is the Churchill Fellowship?

What is the Churchill Fellowship?

Most visited palces by Churchill fellows from 1966 to 2018

What is the Churchill Fellowship?

What is the Churchill Fellowship?

What is the Churchill Fellowship?

Percent of awards visiting each place each decade
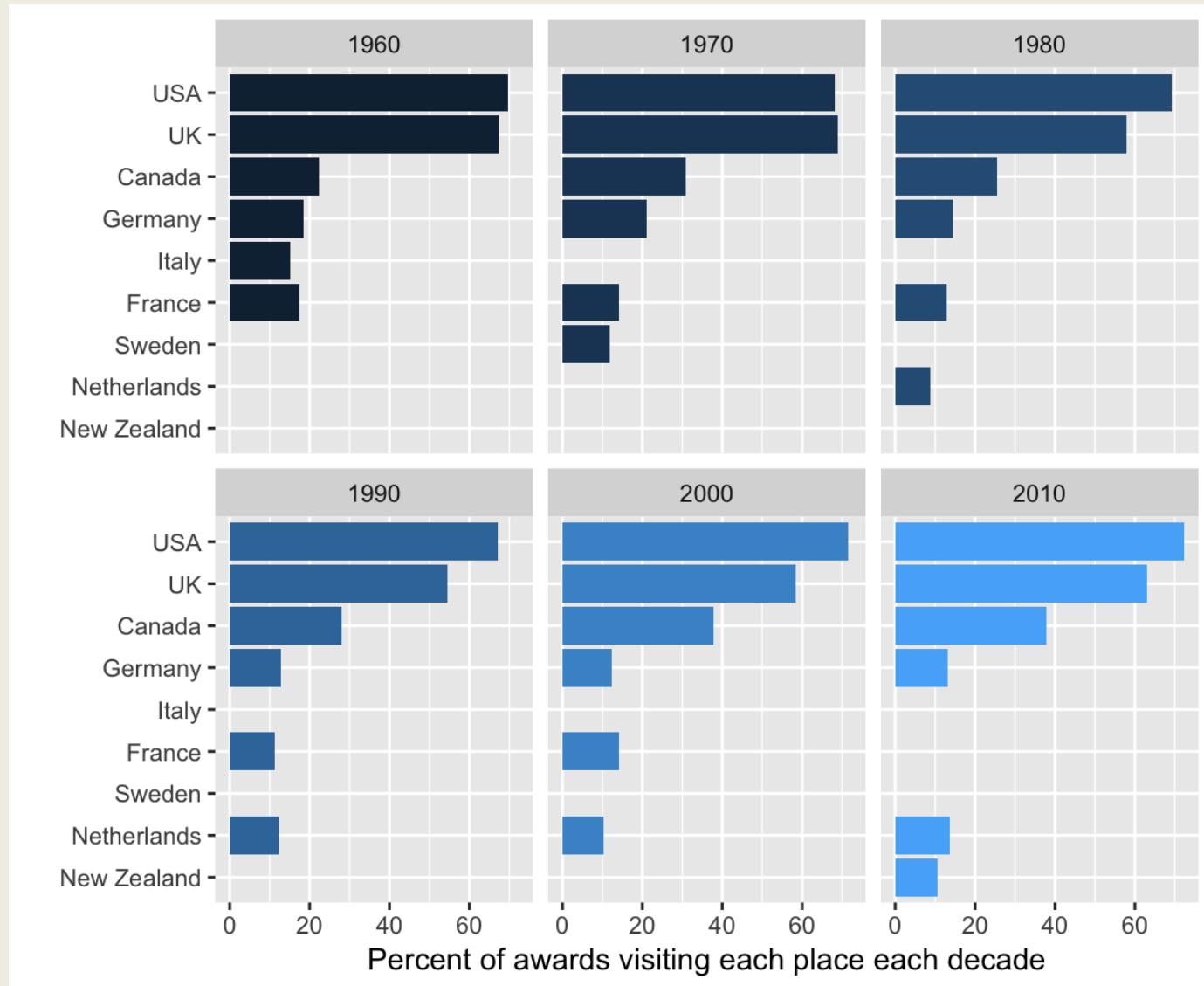
Objective

To create fairness and accountability in the use of government decision making algorithms

?

Not just a statistical issue.

Open science practices.

Resources aren't. They become.

This is my workplace.

Not just AI.

Methods

- Meetings (lots of them)
  - Government
  - Non-government sector
  - Academics
  - Industry

Fairness

- One problem:
  - Some individuals or groups may be adversely affected by automated decision making systems.

Fairness

- One solution
  - Fairness is already part of other legislation
    - Its not clear that this needs new legislation
    - The mechanism for monitoring behavior tends to be the role of statutory bodies

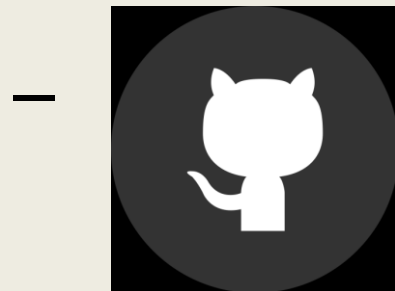# Accountability

- One problem
  - A lot of government analysis is not replicable
  -

Accountability

- One solution
  - Use a full programming language and a distributed version control system
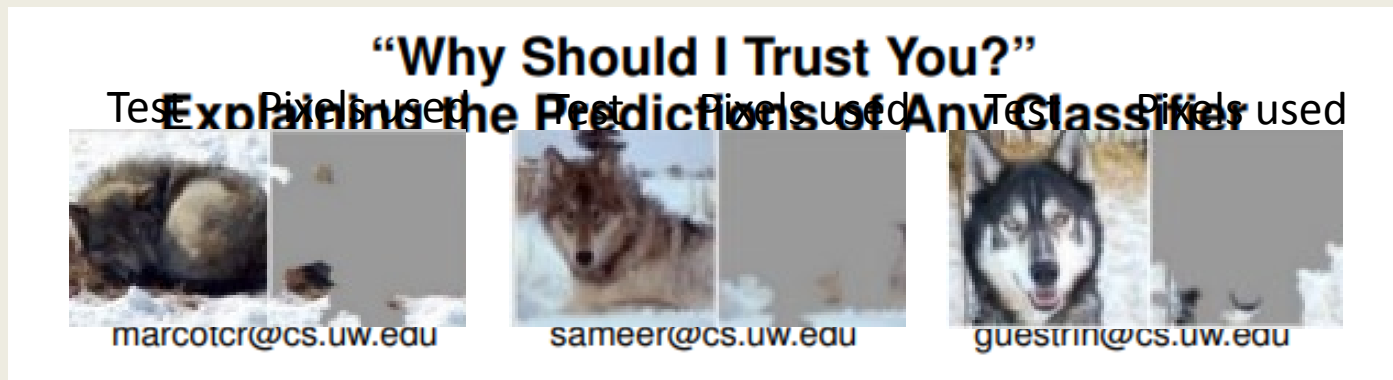 -
  -

Accountability

– One problem

  • The decision making process of some AI is hard to explain

Accountability

- One solution
  - Local Interpretable Model-agnostic Explanations (LIME)

Accountability

- Another solution
  - A second AI trained on explanations

Automated Rationale Generation: A Technique for Explainable AI and its Effects on Human Perceptions

Upol Ehsan
School of Interactive Computing,
Georgia Institute of Technology
Atlanta, Georgia
Department of Information Science,
Cornell University
Ithaca, New York
ehsanu@gatech.edu

Pradyumna Tambwekar
School of Interactive Computing,
Georgia Institute of Technology
Atlanta, Georgia
ptambwekar3@gatech.edu

Larry Chan
School of Interactive Computing,
Georgia Institute of Technology
Atlanta, Georgia
larrychan@gatech.edu

Brent Harrison
Department of Computer Science,
University of Kentucky
Lexington, Kentucky
harrison@cs.kyu.edu

Mark O. Riedl
School of Interactive Computing,
Georgia Institute of Technology
Atlanta, Georgia
riedl@cc.gatech.edu

Use

- One problem
  - Advanced degrees in quantitative fields are rare in the public service (especially in senior roles)
  - This risks being both sold too easily and not being invested enough

Use

- One solution
  - Professional development in quantitative skills especially for senior roles
  - Pathways for quantitative specialists to enter the c-suite

Create

- Public sector R users group
  - I have started a monthly meet up for members of the public sector in Adelaide who use/want to use the R programming language for statistical computing
  - If you would like to come then contact me

Create

- MOD Hedonism exhibit
  - I have an exhibit at UniSA's Museum of Discovery that explores the social and psychological problems with recommendation engines
  - Its called "Its My Pleasure"
    - https://mod.org.au/mypleasure/
  - Get along, its free!
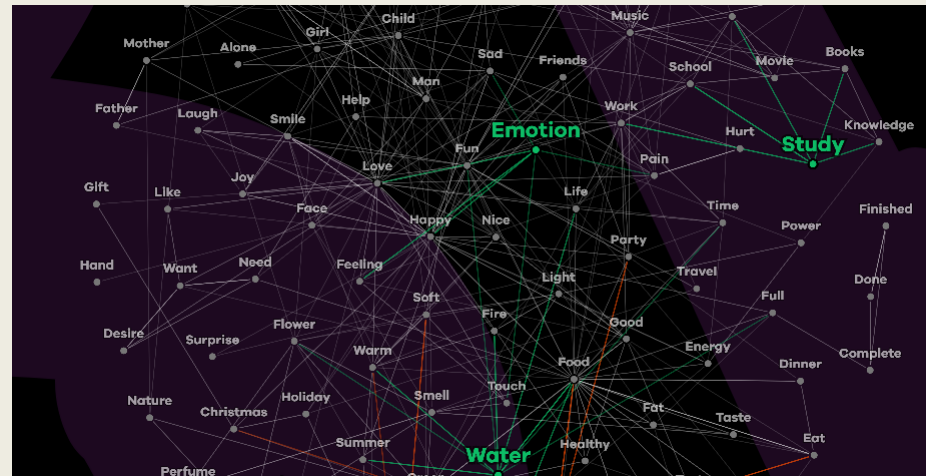
Create

- AI ethics book club
  - I have started a monthly AI ethics book club here in Adelaide
 - You are all welcome

Create

- Digital legislation
  - Met with the Federal Government's Digital Transformation Agency to discuss my work on digital legislation https://ofchurches.rbind.io/post/2019/06/03/legislative-network-in-south-australia/

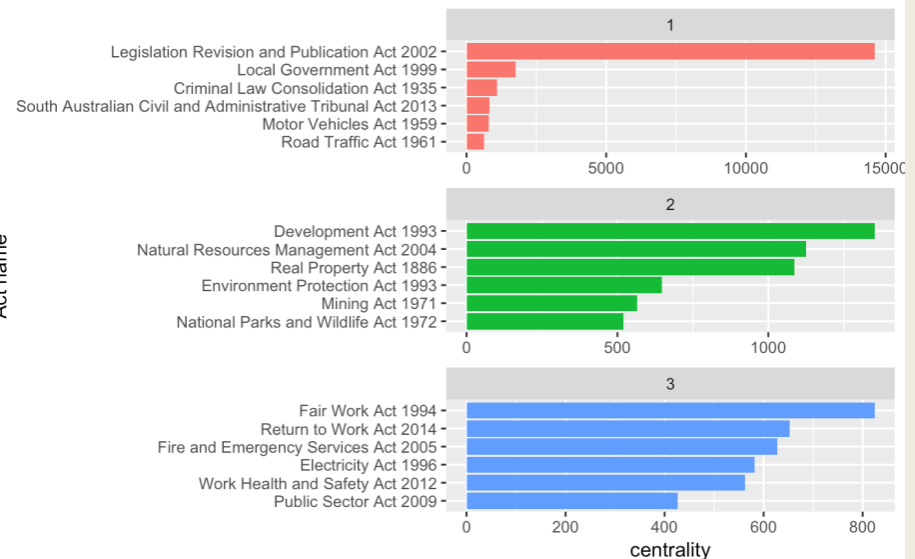(less of a) Hairball of active legislation in South Australia November 2018

Of nodes with degree greater than two hundred (including loops)
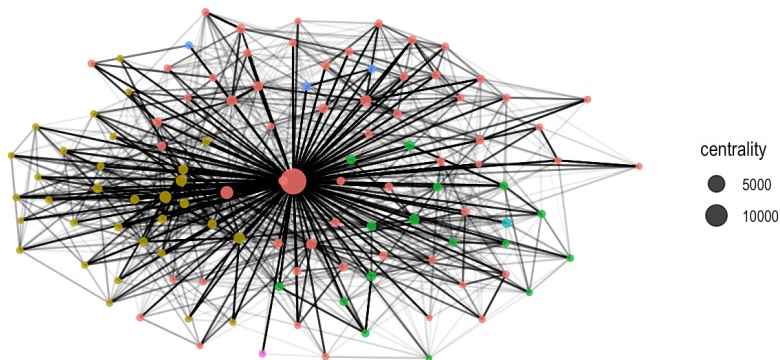
Colour is the result of community detection

Top ten most connected acts in the three largest communities

Of nodes with degree greater than two hundred (inc

Up next

- There will be a full report!

- In the meantime there is
  - my blog: https://ofchurches.rbind.io/