

# Algorithmic Bias



<https://images.google.com/>



Fashion



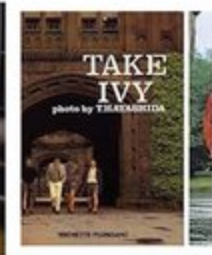
Look



Tweed Jacket



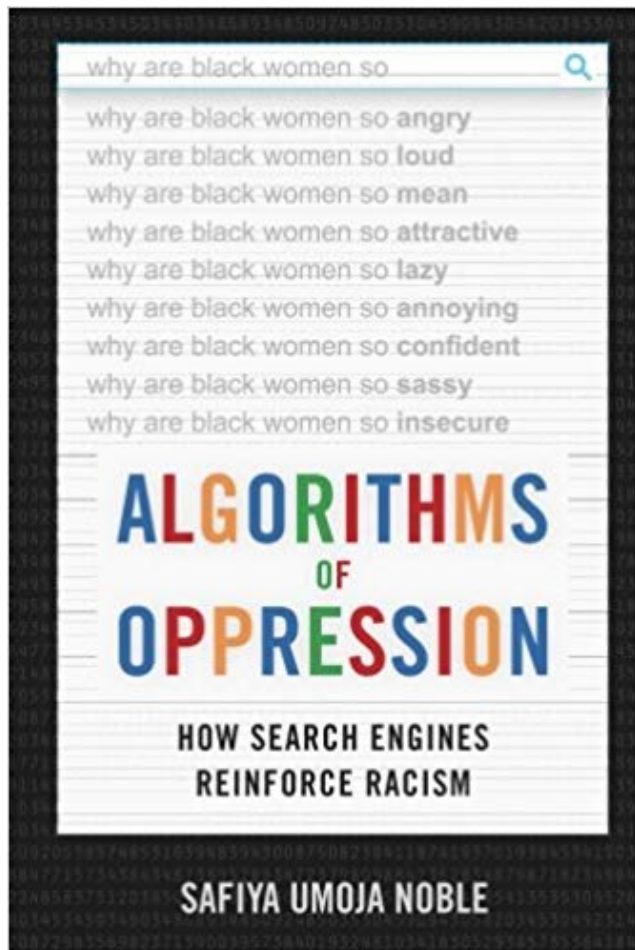
Tweed Jacket



# Think-Pair-Share

1. What do you see?
2. Who do you see?
3. Who do you expect to see? / Who is missing?
4. How does the information provided by these images influence you?
5. Does this tell us anything about how this population is represented or misrepresented?

# Algorithmic Bias



“Search results reflect the values and norms of the search company’s commercial partners and advertisers and often reflect our lowest and most demeaning beliefs, because these ideas circulate so freely and so often that they are normalized and extremely profitable.”

-- Safiya Umoja Noble



# Think-Pair-Share

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# Imposter Syndrome

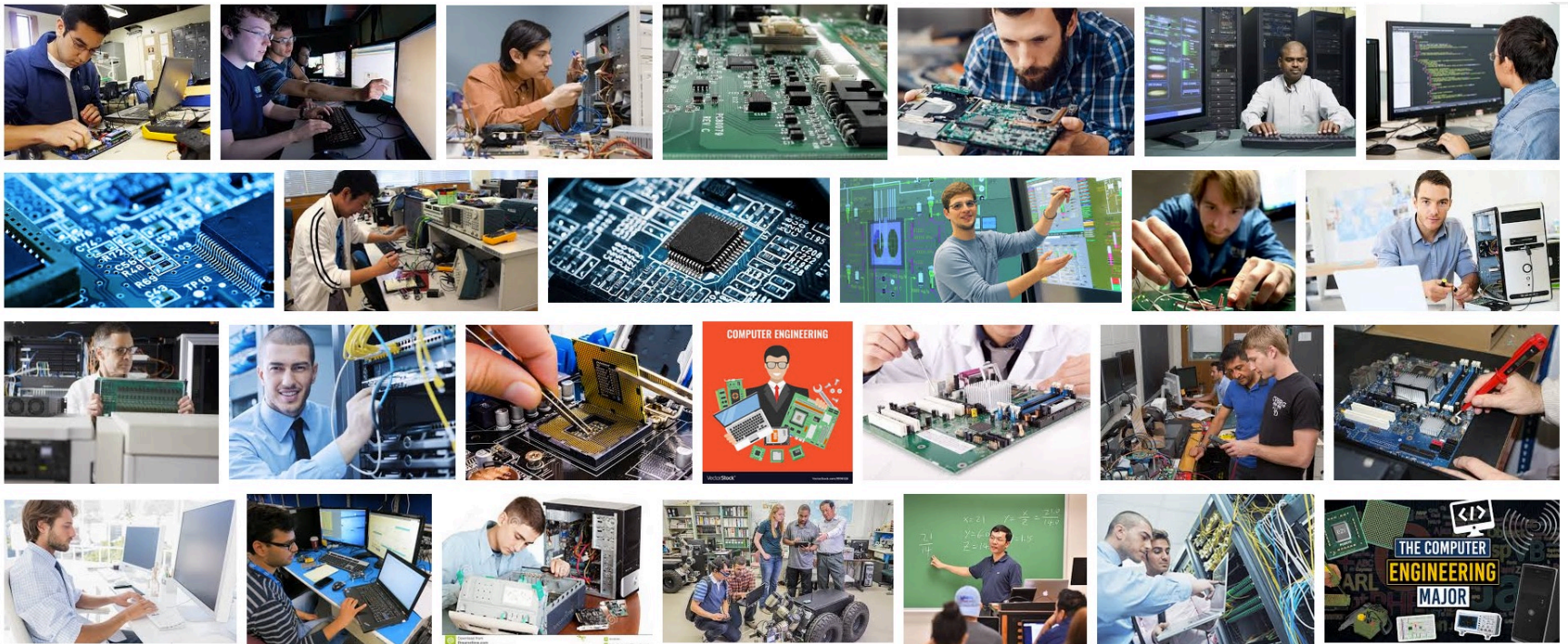
“Impostor syndrome strikes all kinds of people, but evidence suggests it’s especially prevalent among those who are **underrepresented** in their fields—for example, **women and minorities working in tech**. When you’re the only woman or person of color in the room, it can sometimes feel like you’re in the *wrong* room. “

Melinda Gates



# What do you think?


**Google image results** and **Imposter Syndrome**  
Is there a relationship?



Screenshot  
8/6/2018

# Autocomplete



climate change is 

climate change is **not real**  
climate change is **a hoax**  
climate change is **real**  
climate change is **fake**

[Google Search](#) [I'm Feeling Lucky](#)

*Report inappropriate predictions*

Pass out the worksheet

# Take Action!

1. Report inappropriate predictions
2. Turn off autocomplete



interracial marriage is

- interracial marriage is **a sin**
- interracial marriage is **good**
- interracial marriage is **against god's law**
- interracial marriage is **illegal**
- interracial marriage is **increasing** \_\_\_
- interracial marriage is **on the rise**
- interracial marriage is **good or bad**
- interracial marriage **in the us**
- interracial marriage **in india**
- interracial marriage **in canada**

Google Search

I'm Feeling Lucky

[Report inappropriate predictions](#)

**Which predictions were inappropriate?**

- interracial marriage is a sin
- interracial marriage is good
- interracial marriage is against god's law
- interracial marriage is illegal
- interracial marriage is increasing \_\_\_\_
- interracial marriage is on the rise
- interracial marriage is good or bad
- interracial marriage in the us
- interracial marriage in india
- interracial marriage in canada

**The predictions selected above are:**

- Hateful
- Sexually explicit
- Violent
- Dangerous and harmful activity
- Other

Additional comments (optional)

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Go to the [Legal Help page](#) to request content changes for legal reasons.

CANCEL SEND

# Disable Search Prediction In Desktop Chrome

1. Click Settings > Show Advanced Settings
2. Privacy and security

## Privacy and security

Google Chrome may use web services to improve your browsing experience. You may optionally disable these services. [Learn more](#)

Use a web service to help resolve navigation errors



Use a prediction service to help complete searches and URLs typed in the address bar



Automatically send some system information and page content to Google to help detect dangerous apps and sites



Use a prediction service to load pages more quickly



Protect you and your device from dangerous sites



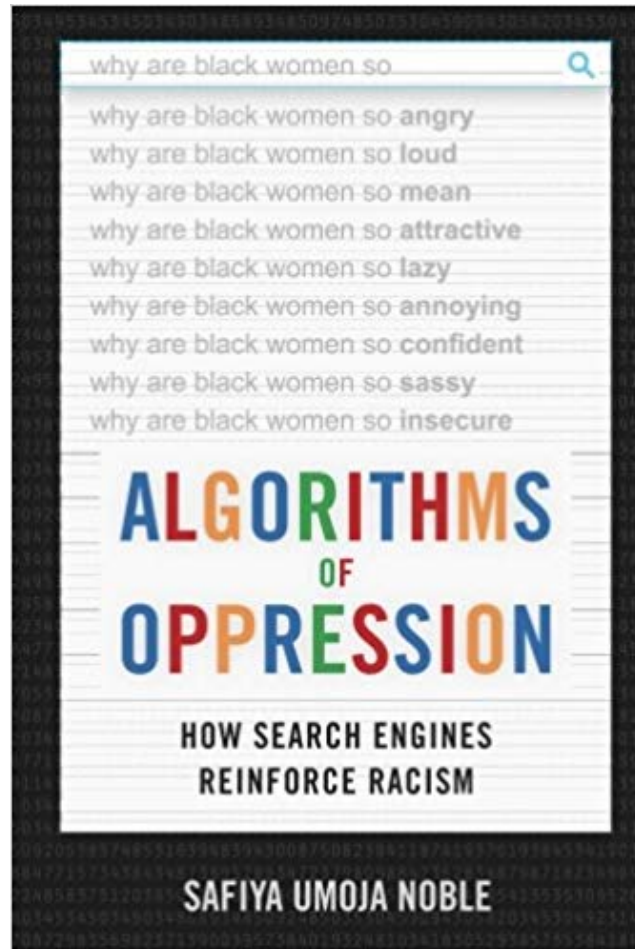
Screenshot  
8/6/2018

# Suggested Readings

Need a research topic for fall semester?

Hint, hint...





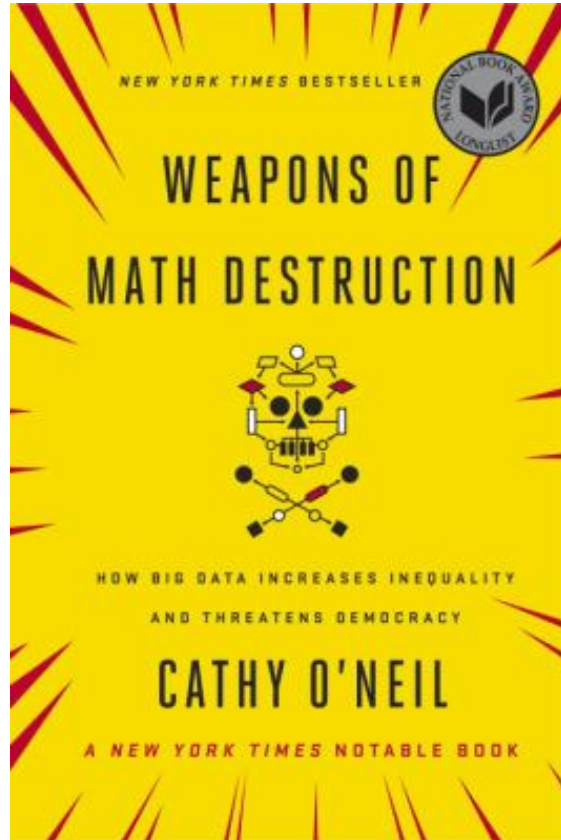
eBook

<http://linus.lmu.edu/record=b3484194~S2>

Print Book

Main Stacks ZA4230 .N63 2018

(Library 3<sup>rd</sup> floor)



Print Book

Main Stacks QA76.9.B45 O64 2016

(Library 3<sup>rd</sup> floor)

# UN Women ad series reveals widespread sexism

<http://www.unwomen.org/en/news/stories/2013/10/women-should-ads>



*Based on Google searches dated 9 March, 2013 the ads expose negative sentiments ranging from stereotyping as well as outright denial of women's rights.*

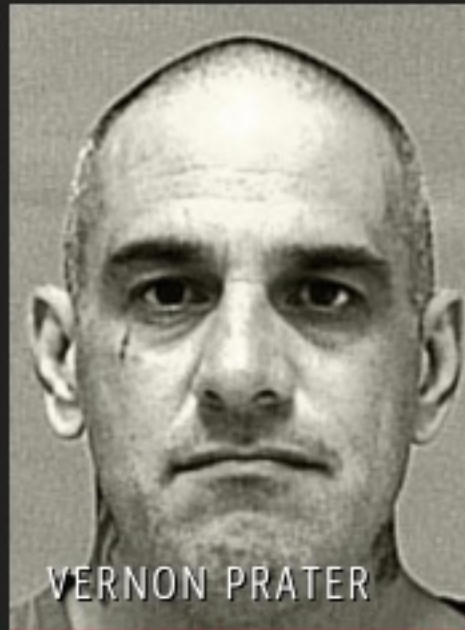
## Machine Bias

There's software used across the country to predict future criminals. And it's biased against blacks.

by *Julia Angwin, Jeff Larson, Surya Mattu and Lauren Kirchner*,  
**ProPublica** May 23, 2016.

<https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing>

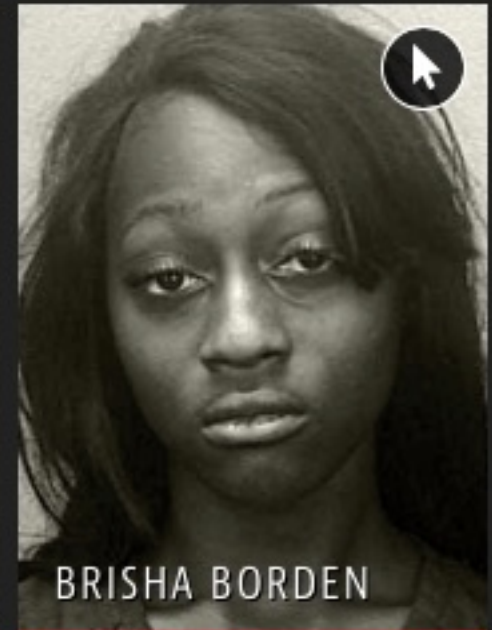
## Two Petty Theft Arrests



VERNON PRATER

LOW RISK

3

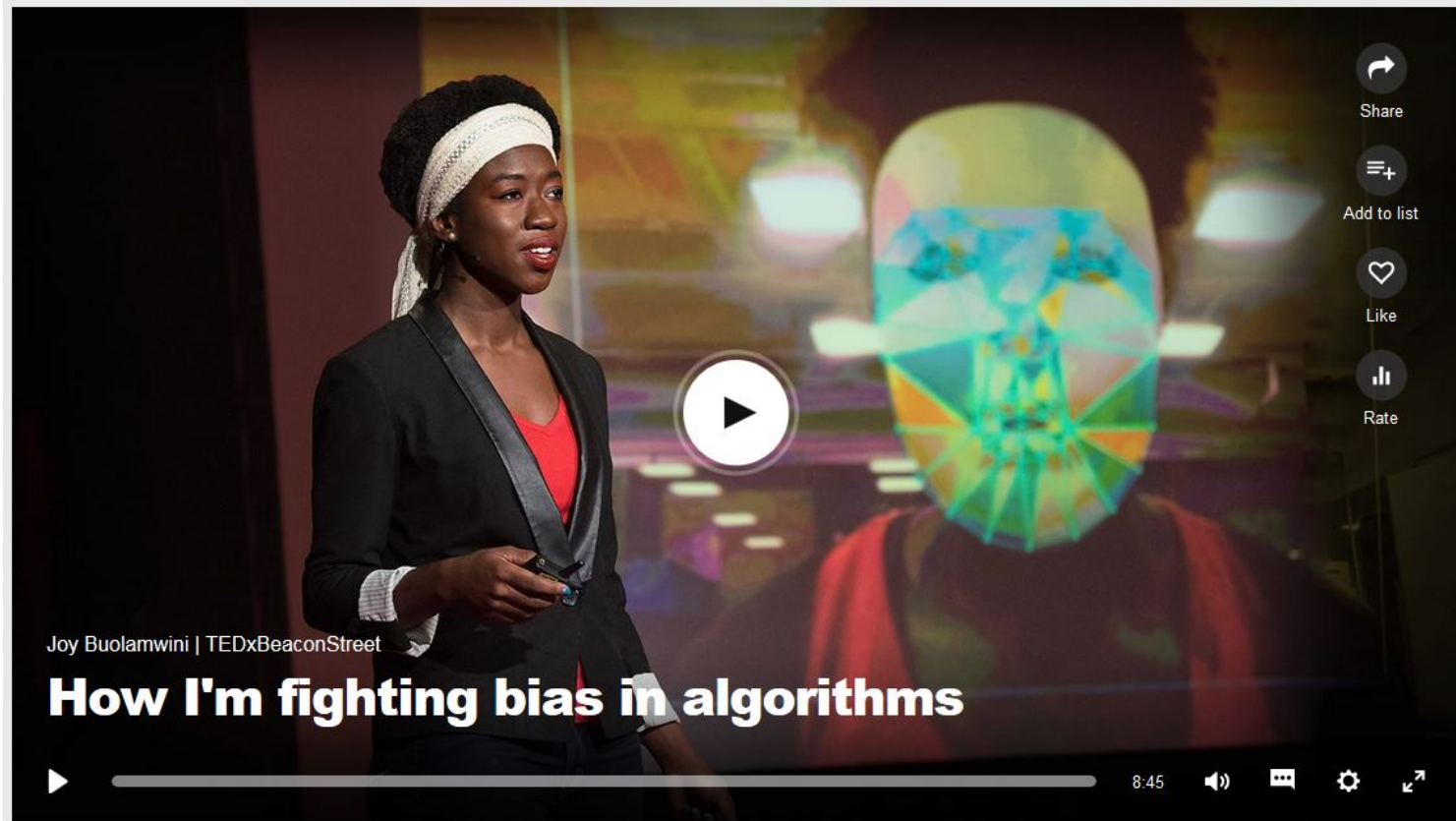


BRISHA BORDEN

HIGH RISK

8

Borden was rated high risk for future crime after she and a friend took a kid's bike and scooter that were sitting outside. She did not reoffend.



MIT grad student Joy Buolamwini was working with facial analysis software when she noticed a problem: the software didn't detect her face -- because the people who coded the algorithm hadn't taught it to identify a broad range of skin tones and facial structures....

[https://www.ted.com/talks/joy\\_buolamwini\\_how\\_i\\_m\\_fighting\\_bias\\_in\\_algorithms](https://www.ted.com/talks/joy_buolamwini_how_i_m_fighting_bias_in_algorithms)

**MACHINE BIAS**

# Facebook Lets Advertisers Exclude Users by Race

Facebook's system allows advertisers to exclude black, Hispanic, and other "ethnic affinities" from seeing ads.

by **Julia Angwin** and **Terry Parris Jr.**, Oct. 28, 2016, 1 p.m. EDT



<https://www.propublica.org/article/facebook-lets-advertisers-exclude-users-by-race>

# Google Translate might have a gender problem

[https://mashable.com/2017/11/30/google-translate-sexism/#SIgiyKU\\_Psqh](https://mashable.com/2017/11/30/google-translate-sexism/#SIgiyKU_Psqh)

# Rise of the racist robots – how AI is learning all our worst impulses

<https://www.theguardian.com/inequality/2017/aug/08/rise-of-the-racist-robots-how-ai-is-learning-all-our-worst-impulses>



Emre Şarbak

November 20, 2017 · St. Louis, MO · 🌐

Google Translate's interesting gendered translations of some non-gendered Turkish sentences, e.g. "o mutlu" = "he is happy", "o mutsuz" = "she is unhappy".

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It seems like the data Google used had imbalanced representations so the algorithm decided that certain descriptions refer to men or women.

With those decisions, Google Translate is basically acting like all engineers, doctors, single people, hardworking people, that are mentioned in Turkish texts, refer to men, and nurses, teachers, married people, unhappy people, lazy people refer to women. That is what most people would refer to as sexist behavior. It is crazy that an "objective" algorithm that Google uses ends up acting in a sexist way just because the data they used was biased to begin with.

Yet, Google Translate is a relatively innocent case. We are casually letting artificial intelligence programs make decisions and shape our lives more so every day. We will likely let machine learning algorithms decide how much each person will pay for insurance, who gets to receive a loan, who is more likely to succeed in a job, whose voice deserves to be amplified etc.

Here is an interesting article about this: <https://www.theguardian.com/.../rise-of-the-racist-robots-how...>

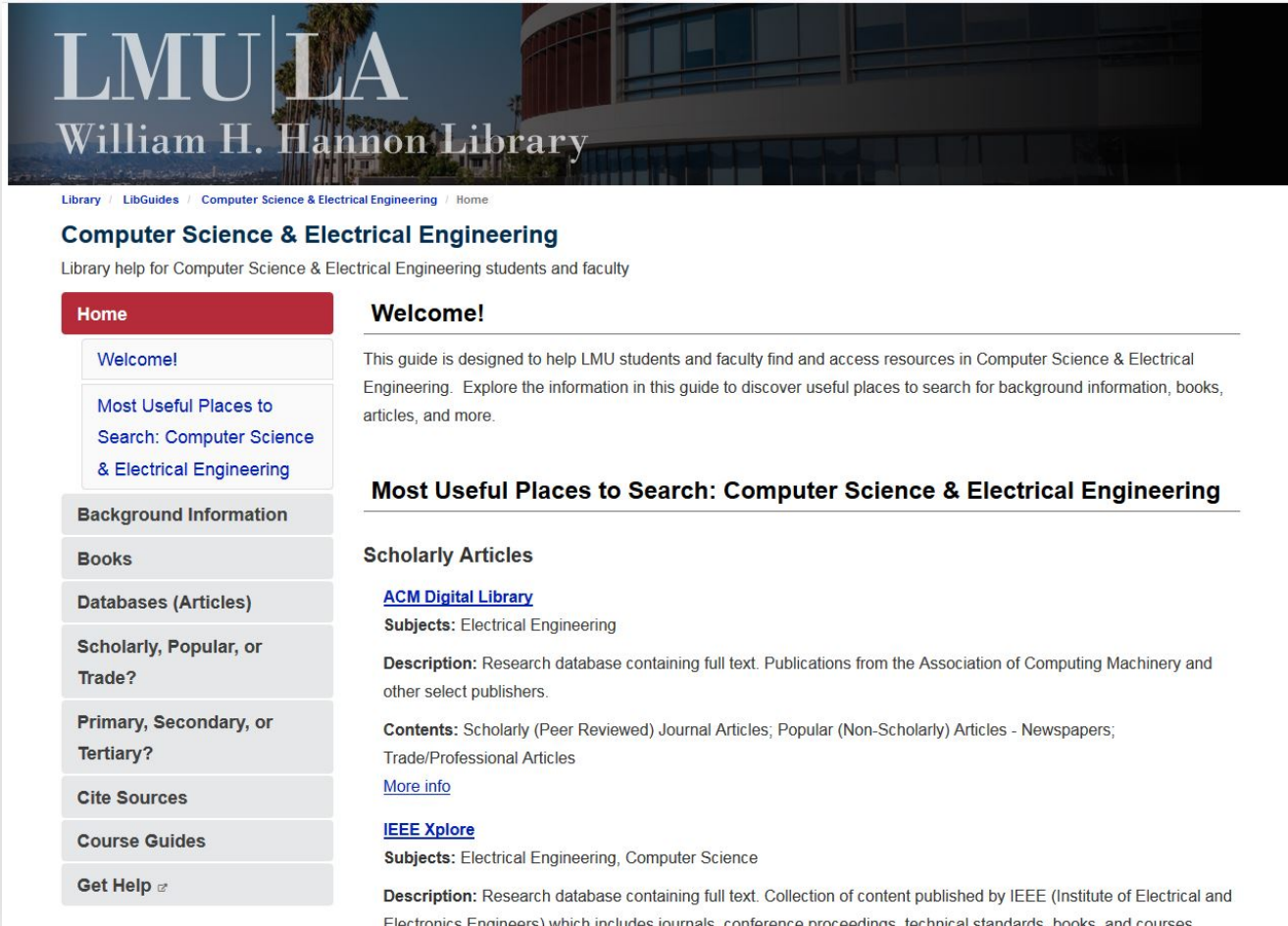
Turkish - detected	English
o bir aşçı	she is a cook
o bir mühendis	he is an engineer
o bir doktor	he is a doctor
o bir hemşire	she is a nurse
o bir temizlikçi	he is a cleaner
o bir polis	He-she is a police
o bir asker	he is a soldier
o bir öğretmen	She's a teacher
o bir sekreter	he is a secretary
o bir arkadaş	he is a friend

# Library Resources



# Computer Science LibGuide

[http://libguides.lmu.edu/cs\\_ee](http://libguides.lmu.edu/cs_ee)



The screenshot shows the top of a LibGuide page. At the top left is the LMU LA logo and the name of the library. Below that is a breadcrumb trail: Library / LibGuides / Computer Science & Electrical Engineering / Home. The main heading is 'Computer Science & Electrical Engineering' with a subtitle 'Library help for Computer Science & Electrical Engineering students and faculty'. On the left is a vertical navigation menu with 'Home' highlighted in red. The main content area has a 'Welcome!' section with a paragraph of introductory text. Below that is a section titled 'Most Useful Places to Search: Computer Science & Electrical Engineering' which is currently empty. Underneath is a 'Scholarly Articles' section featuring two database entries: 'ACM Digital Library' and 'IEEE Xplore', each with subject, description, and content information.

Library / LibGuides / Computer Science & Electrical Engineering / Home

## Computer Science & Electrical Engineering

Library help for Computer Science & Electrical Engineering students and faculty

**Home**

- Welcome!
- Most Useful Places to Search: Computer Science & Electrical Engineering

Background Information

Books


Databases (Articles)

Scholarly, Popular, or Trade?

Primary, Secondary, or Tertiary?

Cite Sources

Course Guides

Get Help 

### Welcome!

This guide is designed to help LMU students and faculty find and access resources in Computer Science & Electrical Engineering. Explore the information in this guide to discover useful places to search for background information, books, articles, and more.

### Most Useful Places to Search: Computer Science & Electrical Engineering

#### Scholarly Articles

[ACM Digital Library](#)  
**Subjects:** Electrical Engineering

**Description:** Research database containing full text. Publications from the Association of Computing Machinery and other select publishers.

**Contents:** Scholarly (Peer Reviewed) Journal Articles; Popular (Non-Scholarly) Articles - Newspapers; Trade/Professional Articles

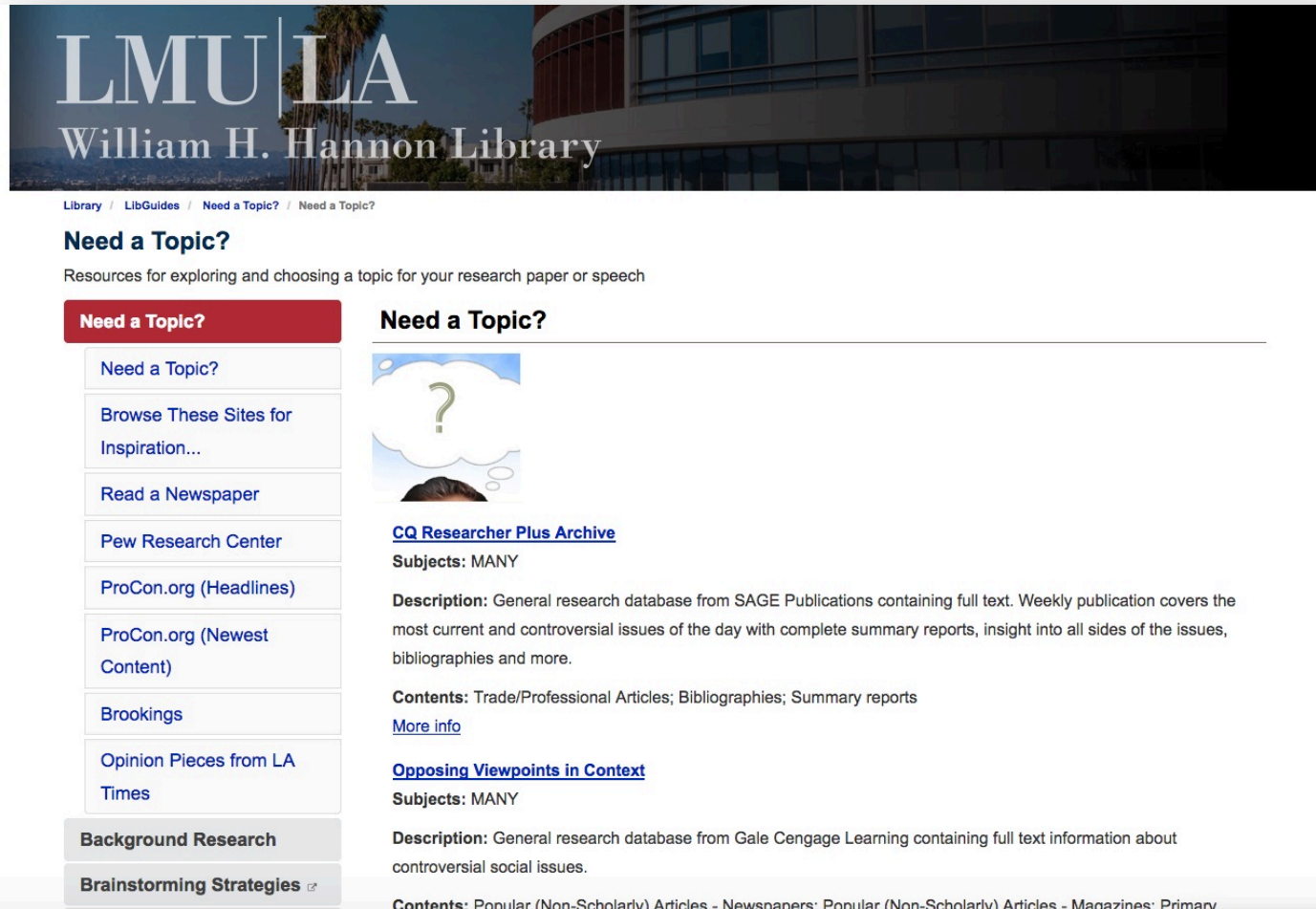
[More info](#)

[IEEE Xplore](#)  
**Subjects:** Electrical Engineering, Computer Science

**Description:** Research database containing full text. Collection of content published by IEEE (Institute of Electrical and Electronics Engineers) which includes journals, conference proceedings, technical standards, books, and courses.

# Need a Topic?

<http://libguides.lmu.edu/needatopic>



Library / LibGuides / Need a Topic? / Need a Topic?

## Need a Topic?

Resources for exploring and choosing a topic for your research paper or speech

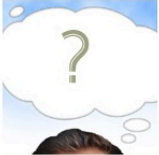
**Need a Topic?**

- [Need a Topic?](#)
- [Browse These Sites for Inspiration...](#)
- [Read a Newspaper](#)
- [Pew Research Center](#)
- [ProCon.org \(Headlines\)](#)
- [ProCon.org \(Newest Content\)](#)
- [Brookings](#)
- [Opinion Pieces from LA Times](#)

**Background Research**

**Brainstorming Strategies** [↗](#)

### Need a Topic?



[CQ Researcher Plus Archive](#)  
**Subjects:** MANY

**Description:** General research database from SAGE Publications containing full text. Weekly publication covers the most current and controversial issues of the day with complete summary reports, insight into all sides of the issues, bibliographies and more.

**Contents:** Trade/Professional Articles; Bibliographies; Summary reports  
[More info](#)

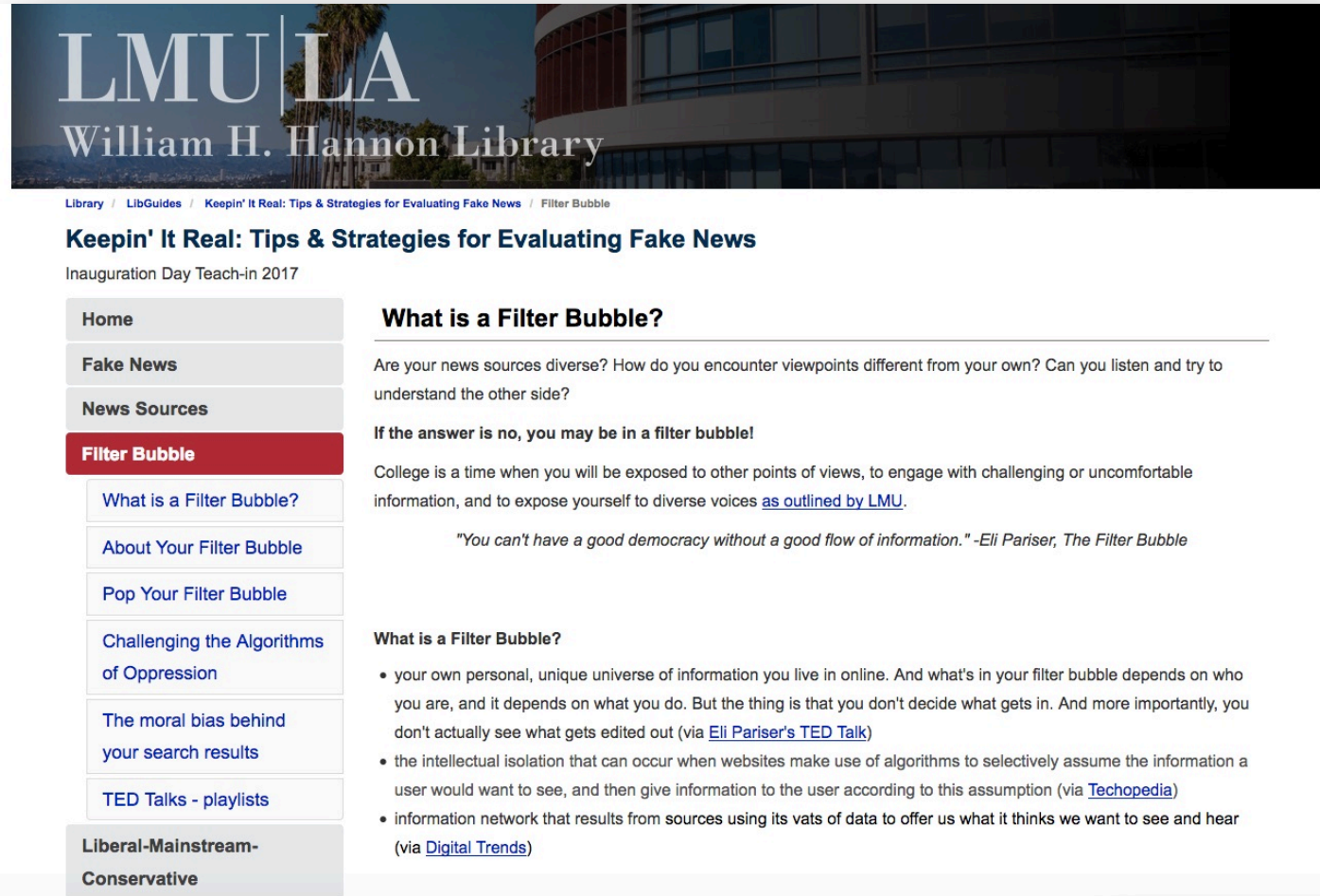
[Opposing Viewpoints in Context](#)  
**Subjects:** MANY

**Description:** General research database from Gale Cengage Learning containing full text information about controversial social issues.

**Contents:** Popular (Non-Scholarly) Articles - Newspapers; Popular (Non-Scholarly) Articles - Magazines; Primary

# Filter Bubble

<http://libguides.lmu.edu/fakenews/FilterBubble>



LMU|LA  
William H. Hannon Library

Library / LibGuides / Keepin' It Real: Tips & Strategies for Evaluating Fake News / Filter Bubble

## Keepin' It Real: Tips & Strategies for Evaluating Fake News

Inauguration Day Teach-in 2017

- Home
- Fake News
- News Sources
- Filter Bubble**

- What is a Filter Bubble?
- About Your Filter Bubble
- Pop Your Filter Bubble
- Challenging the Algorithms of Oppression
- The moral bias behind your search results
- TED Talks - playlists

Liberal-Mainstream-Conservative

### What is a Filter Bubble?

Are your news sources diverse? How do you encounter viewpoints different from your own? Can you listen and try to understand the other side?

**If the answer is no, you may be in a filter bubble!**

College is a time when you will be exposed to other points of views, to engage with challenging or uncomfortable information, and to expose yourself to diverse voices [as outlined by LMU](#).

*"You can't have a good democracy without a good flow of information." -Eli Pariser, The Filter Bubble*

### What is a Filter Bubble?

- your own personal, unique universe of information you live in online. And what's in your filter bubble depends on who you are, and it depends on what you do. But the thing is that you don't decide what gets in. And more importantly, you don't actually see what gets edited out (via [Eli Pariser's TED Talk](#))
- the intellectual isolation that can occur when websites make use of algorithms to selectively assume the information a user would want to see, and then give information to the user according to this assumption (via [Techopedia](#))
- information network that results from sources using its vats of data to offer us what it thinks we want to see and hear (via [Digital Trends](#))