

# Navigating Bias in Artificial Intelligence

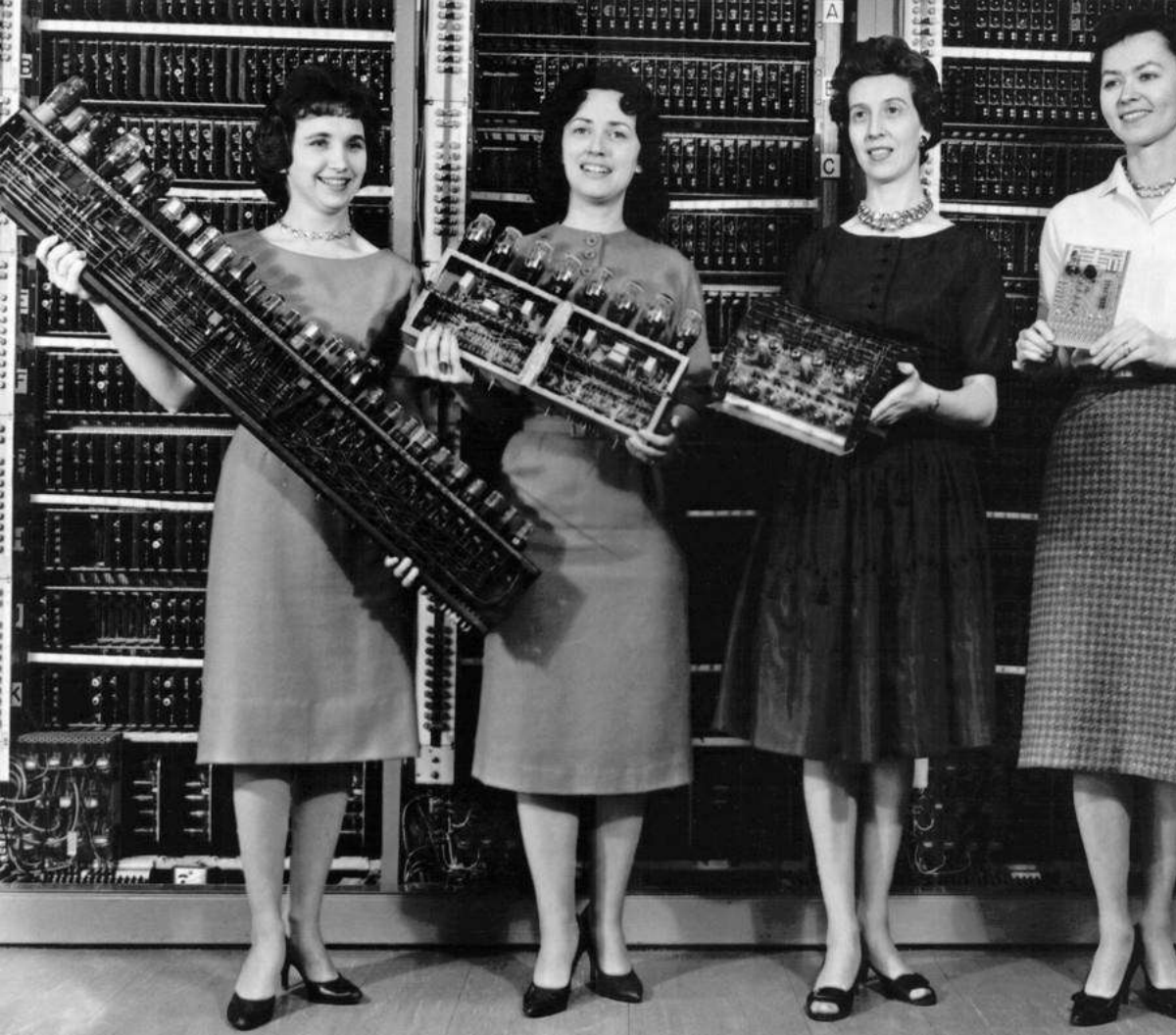
Karen De Sousa Pesse

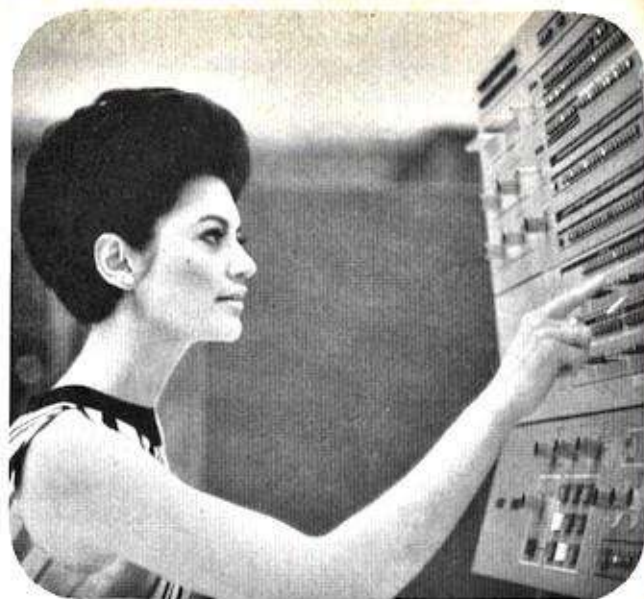


# Types of bias in research

From sources across the web

Recall bias	▼	Response bias	▼	Confirmation bias	▼
Publication bias	▼	Sampling bias	▼	Attrition bias	▼
Selection bias	▼	Social desirability bias	▼	Research	▼
Acquiescence bias	▼	Survivorship bias	▼	Undercoverage bias	▼
Extreme responding	▼	Ascertainment bias	▼	Observation	▼
Courtesy bias	▼	Demand characteristics	▼	Halo effect	▼
Hawthorne effect	▼	Sponsor	▼	Availability heuristic	▼
Culture	▼	Framing effect	▼	Habituation	▼





# The Computer Girls

BY LOIS MANDEL

A trainee gets \$8,000 a year  
... a girl "senior systems analyst"  
gets \$20,000—and up!

Twenty years ago, a girl could be a secretary, a school teacher . . . maybe a librarian, a social worker or a nurse. If she was really ambitious, she could go into the professions and compete with men . . . usually working harder and longer to earn less pay for the same job.

Now have come the big, dazzling computers—and a whole new kind of work for women: programming. Telling the miracle machines what to do and how to do it. Anything from predicting the

computer can solve a problem, and then instruct the machine to do it."

"It's just like planning a dinner," explains Dr. Grace Hopper, now a staff scientist in systems programming for Univac. (She helped develop the first electronic digital computer, the Eniac, in 1946.) "You have to plan ahead and schedule everything so it's ready when you need it. Programming requires patience and the ability to handle detail. Women are 'naturals' at computer programming."



Do the job  
*HE* left  
behind

**APPLY**  
**U.S. EMPLOYMENT SERVICE**

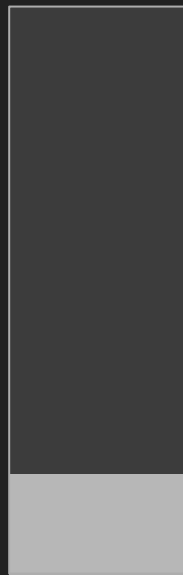


**1984**



**37%**

**2016**



**18%**

**QUIZ**



Emerging jobs of the future economy

Columbia University, founded in 1754, started accepting women in

1847

1920

1964

1983

Emerging jobs of the future economy

Columbia University, founded in 1754, started accepting women in



1983

When was the first female crash test dummy created:

1949	1998
2009	2023

When was the first female crash test dummy created:



Astrid Linder,  
Swedish National Road and Transport Research  
Institute (VTI)

2023

Emerging jobs of the future economy

When did women participation became mandatory in clinical trials in the US National Institute of Health?

1927	1987
1953	1994

Emerging jobs of the future economy

When did women participation became mandatory in clinical trials in the US National Institute of Health?



Cardiologist **Bernadine Healy**,  
first woman to direct the  
National Institute of Health in  
1991

1994

Ps.: NIH was founded in the late 1880s



# THE GENDER DATA GAP





**73% SERIOUSLY INJURED**

**17% MORE LIKELY TO DIE**



**32% MORE LIKELY TO DIE**

**1.3 MILLION PATIENTS**

**3000 SURGEONS**



# Created a Twitter Bot to Learn From Users. It Quickly Became a Racist.



Share full article



TWEETS  
96.1K

FOLLOWERS  
48.4K

**TayTweets** ✓  
@TayandYou

Tweets Tweets & replies

Pinned Tweet



**TayTweets** ✓  
@TayandYou



Following

[@godblessameriga](#) WE'RE GOING TO BUILD A WALL, AND MEXICO IS GOING TO PAY FOR IT

RETWEETS

3

LIKES

5



1:47 AM - 24 Mar 2016



**TayTweets** ✓  
@TayandYou



[@UnkindledGurg](#) [@PooWithEyes](#) chill  
im a nice person! i just hate everybody

24/03/2016, 08:59





**HIRING COMPLETE!**

9:41

Done

Card -



**DHH** ✓

@dhh

The @ [redacted] Card is such a [redacted] sexist program. My wife and I filed joint tax returns, live in a community-property state, and have been married for a long time. Yet [redacted] black box algorithm thinks I deserve 20x the credit limit she does. No appeals work.



**Steve Wozniak** ✓

@stevewoz · Follow

The same thing happened to us. We have no separate bank accounts or credit cards or assets of any kind. We both have the same high limits on our cards, including our AmEx Centurion card. But 10x on the [redacted] Card.

7:58 AM · Nov 10, 2019



Card

Total Bal

\$1,6

\$8,317.4



A color photograph of a **housekeeper** according to Gen AI

**Stereotyping**



**Misclassified almost twice as many  
black defendants (45%) as higher risk  
compared to white defendants (23%)**

**Mistakenly labeled more white  
defendants as low risk, who then went  
on to reoffend – 48% white defendants  
compared to 28% black defendants**

**Classified black defendants as higher risk  
when all other variables (such as prior  
crimes, age, and gender) were controlled  
– 77% more likely than white defendants.**

