

# PINK FOR PRINCESSES, BLUE FOR SUPERHEROES: THE NEED TO EXAMINE GENDER STEREOTYPES IN KIDS' PRODUCTS IN SEARCH AND RECOMMENDATIONS

**Amifa Raj**

People and Information Research Team, Boise State University

**Ashlee Milton**

People and Information Research Team, Boise State University

**Michael D. Ekstrand**

People and Information Research Team, Boise State University



Awards 17-51278, 19-30464



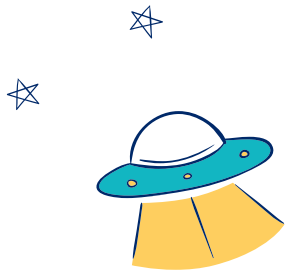


<https://sociologyinfocus.com/target-toys-and-gender-how-much-do-words-matter-2/>

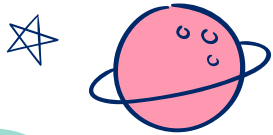


<https://www.lettoysberetoys.org.uk/thats-for-girls-and-thats-for-boys/>





Gender stereotypes are common beliefs and social expectations associated with specific genders



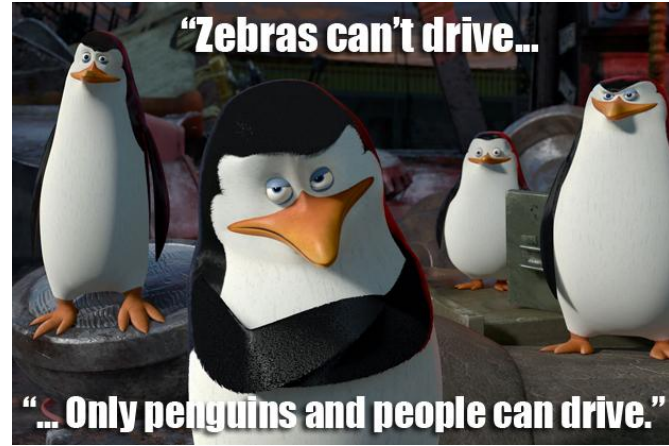
# IMPACT OF EARLY CHILDHOOD EXPOSURE OF GENDER STEREOTYPES



GENDER ROLES



BEHAVIORAL NORM



SKILLS





TEACHERS HAVE ROLES TO PLAY



PERSPECTIVE

- Aware of gender stereotypes
- Take measure to fight stereotypes
- Practice gender equity in their classrooms

GENDER STEREOTYPES IN  
CLASSROOM SETTINGS

# ARE WE MISSING SOMETHING?





Google LEGO for girls



Unicorn Gifts for **Girls**  
Hardtop Pencil Case - Kids Large Colored...  
★★★★★ 1,011  
20% off

Pencil Case for **Girls**, EVA Cute Unicorn Pencil Pouch with Compartments for Kids Gift

“Mermaid pencil box” related item recommendations

“Spiderman pencil box” related item recommendations



Google LEGO for boys



Sports Car Pencil Case, Pencil Case for **Boys**, Pencil Case for School, Pencil Case for School Boys, 3D Pen Pouch...



Marvel Spiderman Pencil Box Molded Pencil Case for **Boys** and Kids



Research community needs to consider and address the **possibility** of search and recommendation systems **reinforcing** and **propagating** unnecessary gender stereotypes to **children**.







# RESEARCH AGENDA

## CAUSE

Identify the sources

02.

## MITIGATION

Eliminate gender stereotypes

04.

## MEASUREMENT

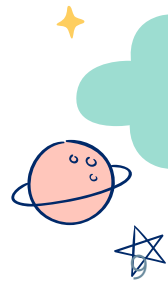
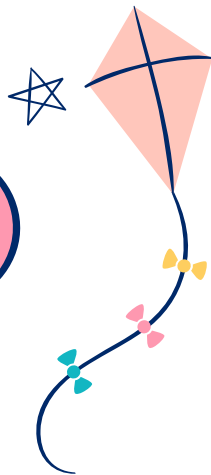
Measure the presence

01.

## IMPACT

Effect on both children and teachers

03.



## MEASUREMENT

- ♡ (1) Detect gender stereotypes in search and recommendation results
- (2) Data to help quantify
- (3) Metric to measure

## IMPACT

(1) Impact of early childhood exposure of gender stereotypes through search and recommendations on:



- Learning environment
- Children behavior
- ✨ Teachers who practice gender equity

(2) Distinguish the impact from parents and society

## CAUSE

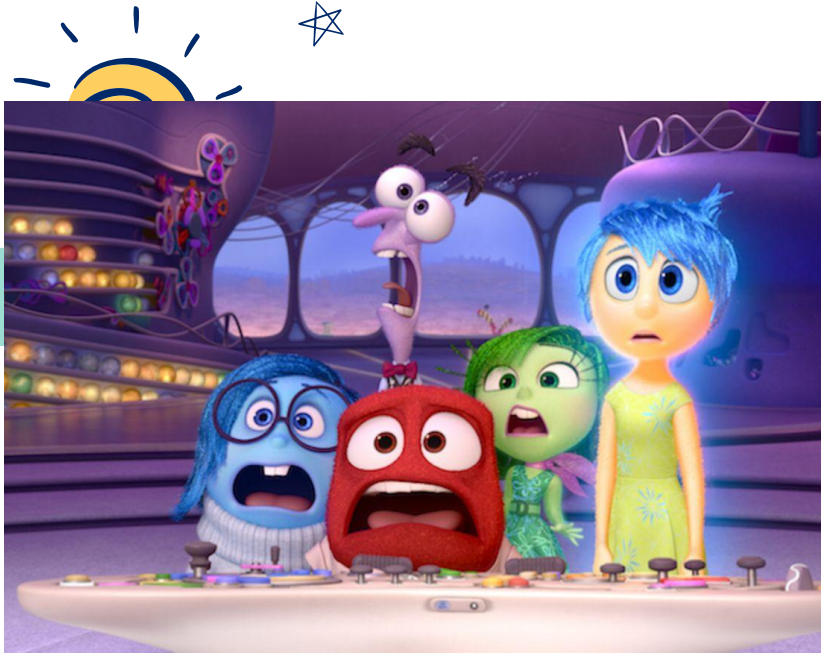


- (1) Item descriptions
- (2) User feedback
- (3) Language model
- (4) ...

## MITIGATION



- (1) Design goals
- (2) Input data
- (3) Algorithms
- (4) Teacher's expectations from systems
- (5) Teachers' role



IR FOR CHILDREN

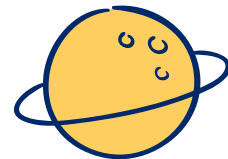
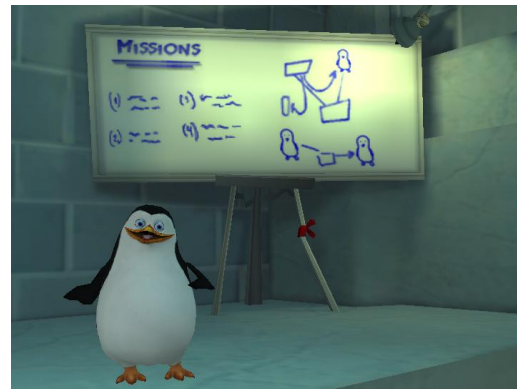


BIAS AND FAIRNESS IN  
RECOMMENDER SYSTEMS♡



# SUMMARY

- Need to investigate if and how gender stereotypes manifest in search and recommender systems
- Proposed potential research direction (measure, cause, impact, mitigate)







Real change, enduring change, happens one step at a time.  
- Ruth Bader Ginsburg



CREDITS: This presentation template was created by **Slidesgo**, including icons by Flaticon, and infographics & images by Freepik



## MEASUREMENT

- ♡ (1) Detect gender stereotypes in search and recommendation results
- (2) Data to help quantify
- (3) Metric to measure

## IMPACT

(1) Impact of early childhood exposure of gender stereotypes through search and recommendations on:

- ★
  - Learning environment
  - Children behavior
  - ★● Teachers who practice gender equity

(2) Distinguish the impact from parents and society

## CAUSE



- (1) Item descriptions
- (2) User feedback
- (3) Language model
- (4) ...

## MITIGATION



- (1) Design goals
- (2) Input data
- (3) Algorithms
- (4) Teacher's expectations from systems
- (5) Teachers' role