

# Bandits and Browsing

## Effective Collection Size as Way of Quantifying Search Efficiency

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### EFFECTIVE COLLECTION SIZE

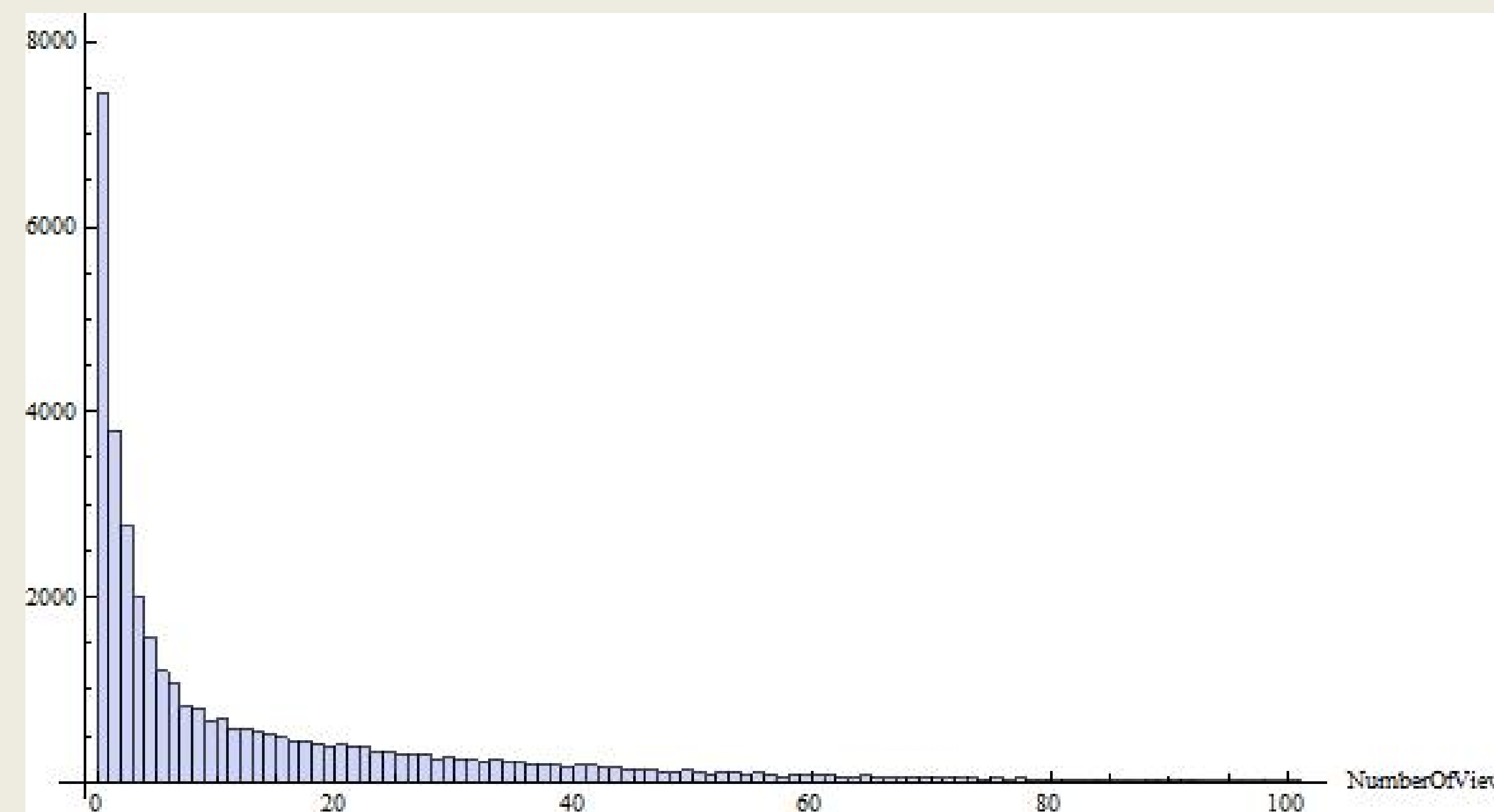
Effective Collection Size quantifies how efficiently a library uses its collection. It focuses on highlighting understudied works and aims to prevent the omission of useful materials in a collection.

#### WHY?

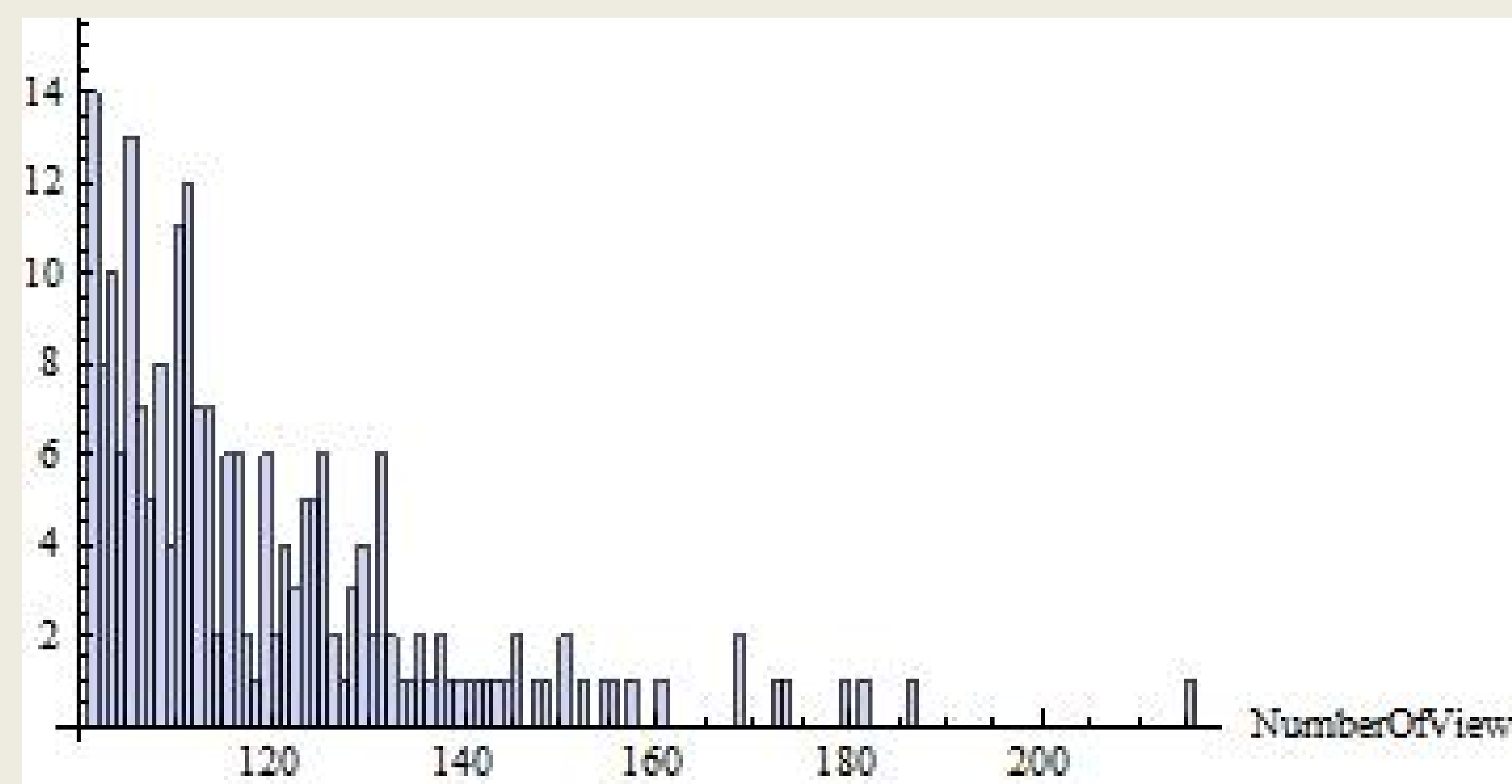
Biases in traditional search algorithms send most users to the same high-ranking materials. Digital libraries can adapt to user behavior, identify useful material and send users to relevant but understudied sources.

#### OUR PROJECT

- Prototype data: University of Illinois Library catalog circulation statistics
- Use our physical catalog to learn about collection use
- Apply this to improve search and recommendations in digital collections



Circulation of all titles with threshold of 100 checkouts



Circulation of all titles with more than 100 checkouts

### ANALYSIS AND INITIAL RESULTS

- Ran statistical analysis on the English collection.
- Found books and topics that are of unusually high use and quantified statistically.
- Identified improbably understudied items.
- Found topics of interest for digital collection development.

### NEXT STEPS

- Analyze the broader University of Illinois catalog.
- Incorporate analysis into Illinois Harvest digital library search results.
- Produce a set of tools to help highlight understudied materials during reference and digitization projects.
- Use results to quantify increases in efficiency of collection use.

### SELECT REFERENCES

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