

# Relevant Clouds: Leveraging Relevance Feedback to Build Tag Clouds for Image Search

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# Presentation Outline

Introduction	1
Related Work	2
RF-based Tag Clouds	6
User Study	9
Conclusion	14

# Introduction

Using **textual queries** to retrieve images can be problematic:

uncommon topics, user's non-familiarity, etc.

Possible solutions:

query ~~autocompletion~~/suggestion/refinement, tags, relevance feedback

Our approach:

a combination of *tags clouds* and *relevance feedback*.

# Related Work

Tag clouds:

[Callegari and Morreale \(2010\)](#)

Relevance Feedback (RF):

[Rui et al. \(1998\)](#)

RF-based query suggestion:


[Leiva et al. \(2011\)](#)


# Related Work: Tag Clouds


flickr Sign Up Explore Upload  Sign In


Explore / Tags / sky / clusters

Jump to:


  
clouds, water, sea, sand, light, white, sunrise, grass, nikon, hdr  
[See more in this cluster...](#)


  
blue, night, building, cielo, architecture, moon, canon, ocean, flower, lake  
[See more in this cluster...](#)


  
sunset, tree, nature, cloud, beach, red, silhouette, green, yellow, dusk  
[See more in this cluster...](#)


  
sun, trees, landscape, orange  
[See more in this cluster...](#)


These are the *most recent* uploads tagged with sky. [See more...](#)


 From ngotoh

 From jacklionheart

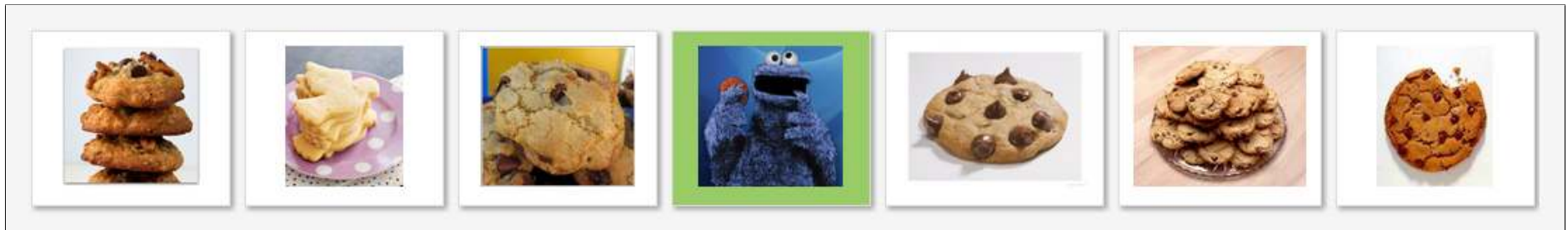
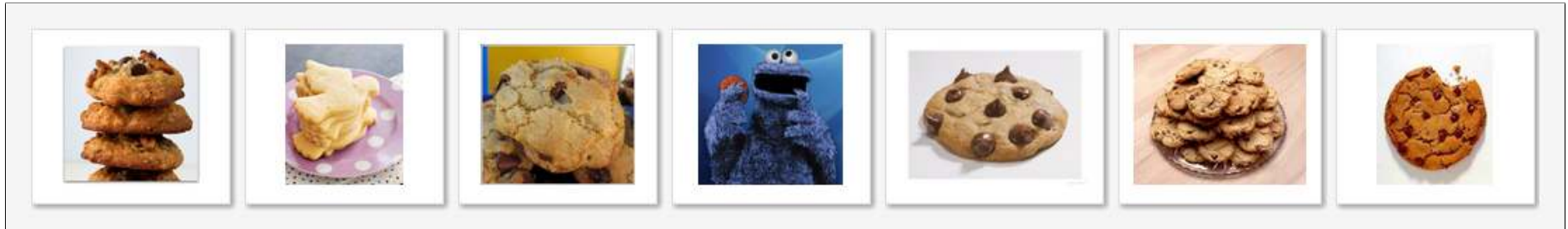
 From ngotoh

 From Junni58

 From ngotoh

 From Samsul Adam

# Related Work: Relevance Feedback




# Related Work: RF-based query suggestion

cookie

Are you looking for *cookie chip chocolate*?

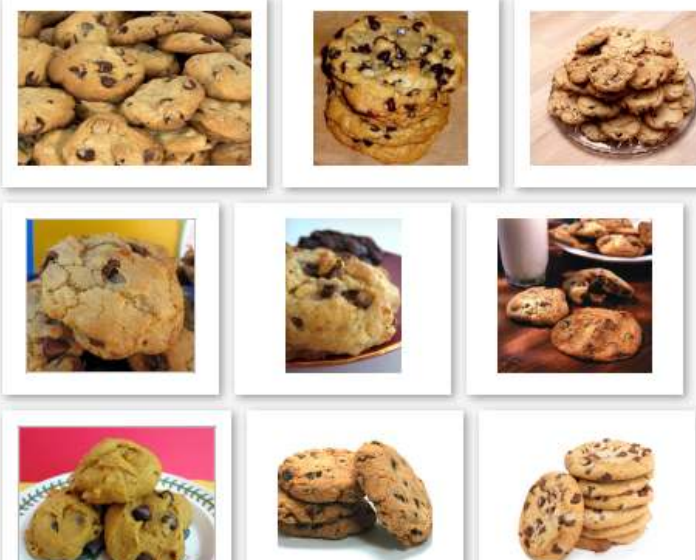
>>



cookie chip chocolate

Showing 1 - 10 of approximately 127140 images about **cookie chip chocolate** (0.445 seconds)

>>



# RF-based Tag Clouds

house

**2009 actor actress** [alternate](#) [awards](#) [bad](#) [buddy](#) [tv](#)

[click](#) [designs](#) **dr** [gallery](#) [gregory](#) [hugh](#) [imp](#) [jennifer](#) [larger](#) [laurie](#) [morrison](#)

[movie](#) **news** [poster](#) [thumbnails](#) **tv** [version](#) [wallpapers](#)



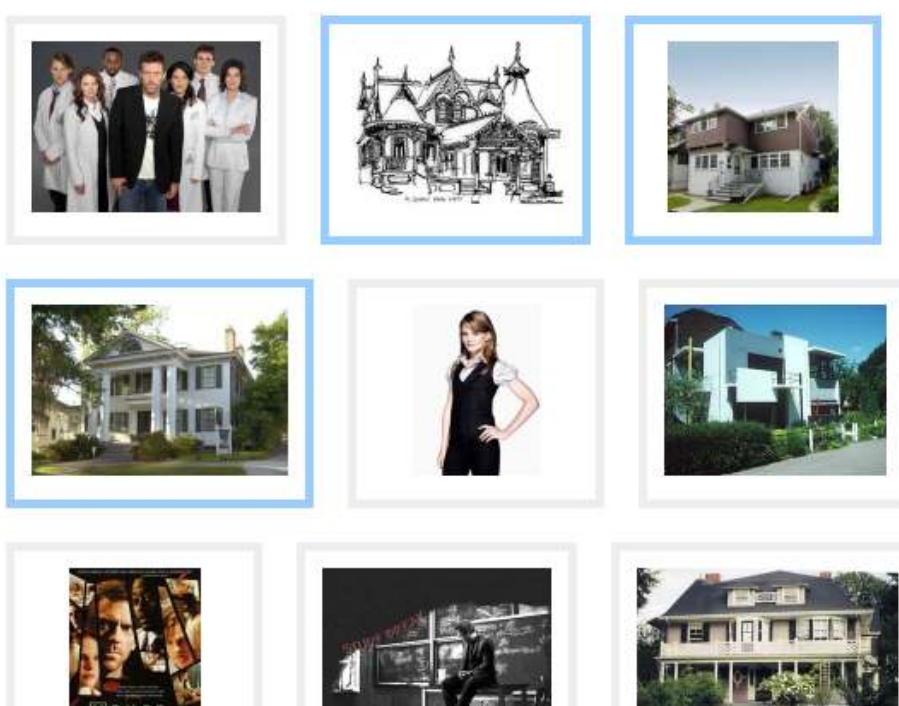
house

98 1843 black boissiere builder **built** [campus](#) [connected](#) [emily](#) [florida](#)

[george](#) **historic** [history](#) **home** [important](#) [knott](#)

**landmark** [map](#) [murphy](#) **museum** **park** [proctor](#)

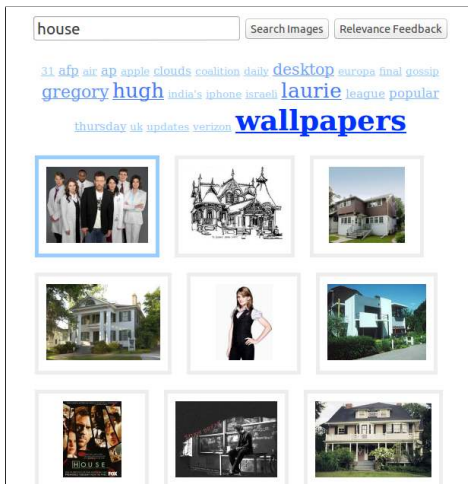
[sites](#) [stay](#) [wife](#)





# RF-based Tag Clouds

1 image selected



2 images selected



3 images selected



4 images selected



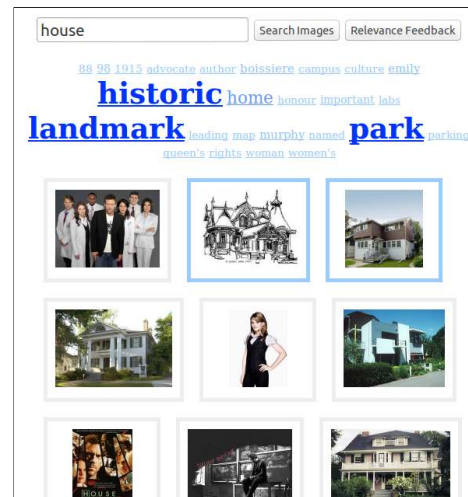
Query "house", subset 1: related to the TV series

# RF-based Tag Clouds

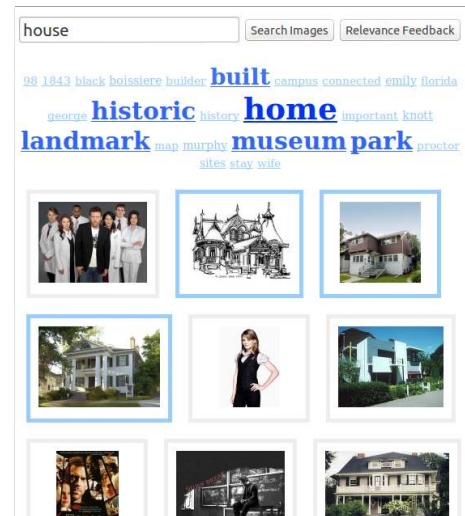
1 image selected



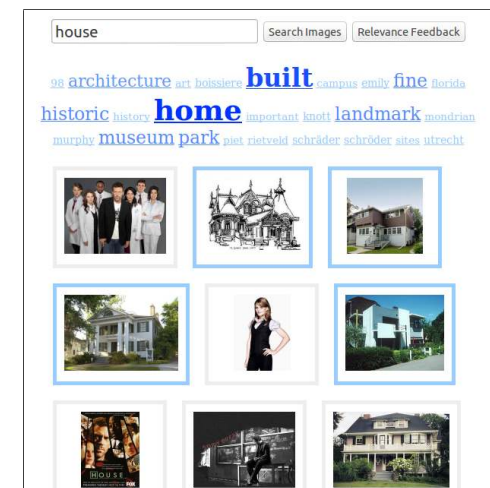
2 images selected



3 images selected



4 images selected



Query "house", subset 2: related to buildings

# User Study

+30M of automatically annotated images, see [Villegas and Paredes \(2012\)](#).

164 queries according to ImageCLEF 2012.

14 participants evaluated 12 queries each.

*“Given the current query, select those images that share a common concept. Then check those tags that you consider relevant for that concept.”*

# RISE

Relevant Image Search Engine

drums

Search Images

Get Related Images

Vote

Restart

Showing 1 - 10 of approximately 47817 images about **drums** (0.124 seconds)

sound  music  beat  instrument  snare  song  percussion  tent  add  skip



# RISE

Relevant Image Search Engine

drums

Search Images

Get Related Images

Vote

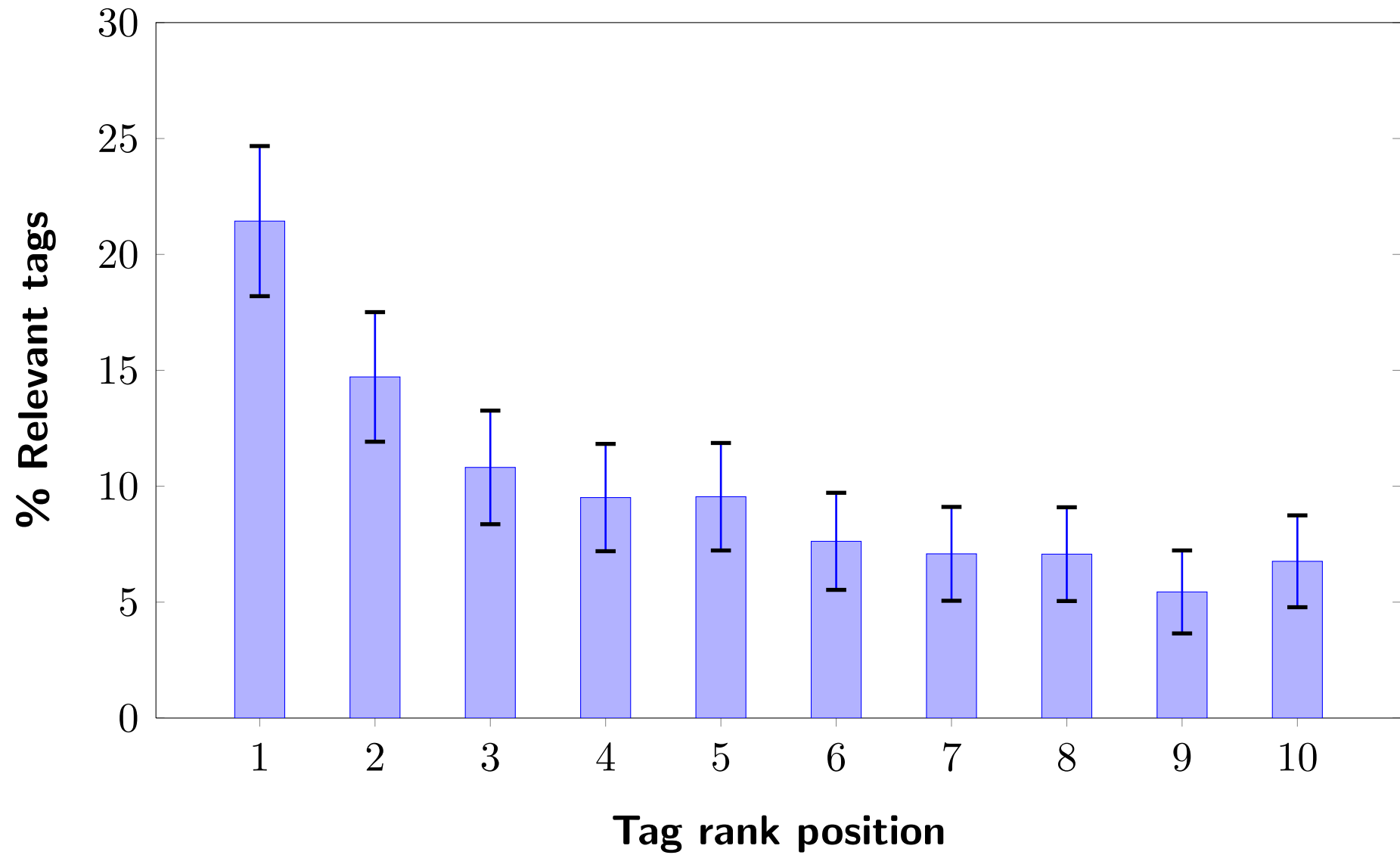
Restart

Showing 1 - 10 of approximately 47817 images about **drums** (0.124 seconds)

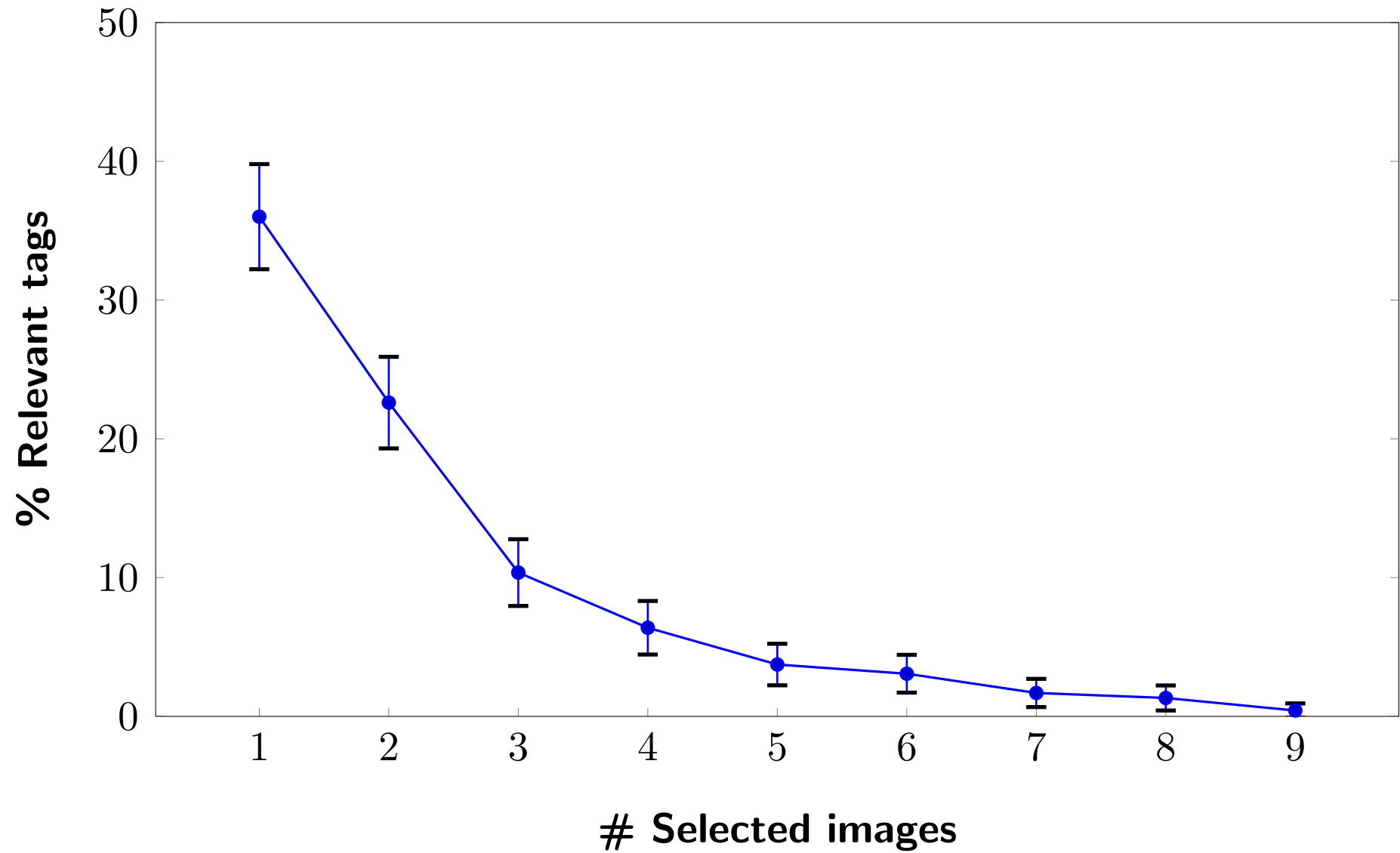
finger  gift  play  beat  set  video  guitar  action  shot  item



# Results



# Results



# Conclusion

RF-based tag clouds:

Give **more options** to the user beyond traditional RF.

Provide a **gist** about the underlying **contents** of the **selected** images.

Ultimately aim to **improve** image search.





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access activities annual approaches areas becoming **clef** community comparison conference  
data development digital discuss diverse **evaluation** form forum highly-structured implementation  
independent **information** initiative innovative investigation jointly key **labs** levels libraries  
main methodologies multidisciplinary **multilingual multimodal** peer-reviewed providing range  
**research** resulting results role system **systems** taken tpdl tuning various wide workshops



# References

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