

# Inter-Context **Trust Bootstrapping** for Mobile Content Sharing

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**What do I do?**

Research @



UCL

**what I research?**

# Reputation Systems for Mobiles

**What's that?**

# Example: antique markets

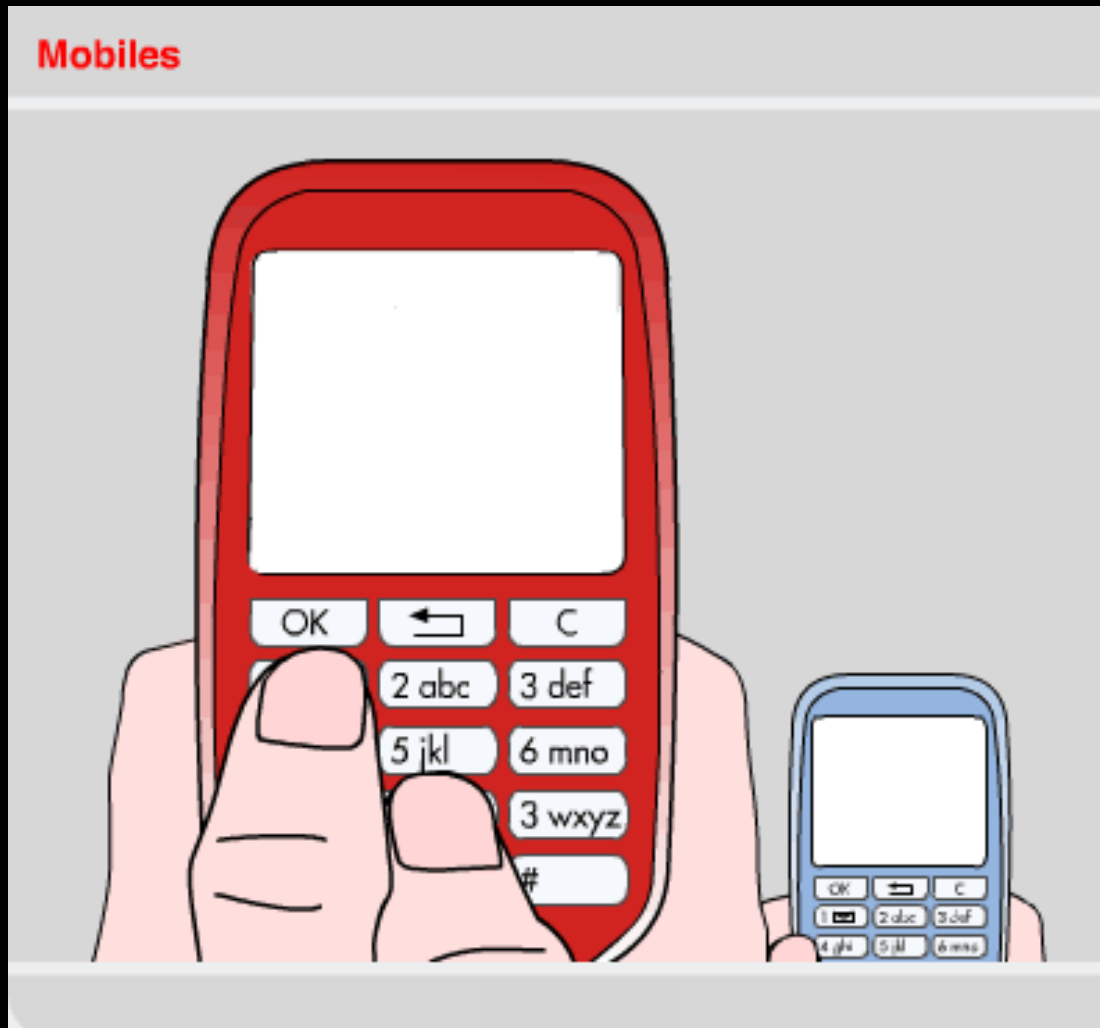


**Problem:** *Visitors* cannot see prices of everything!





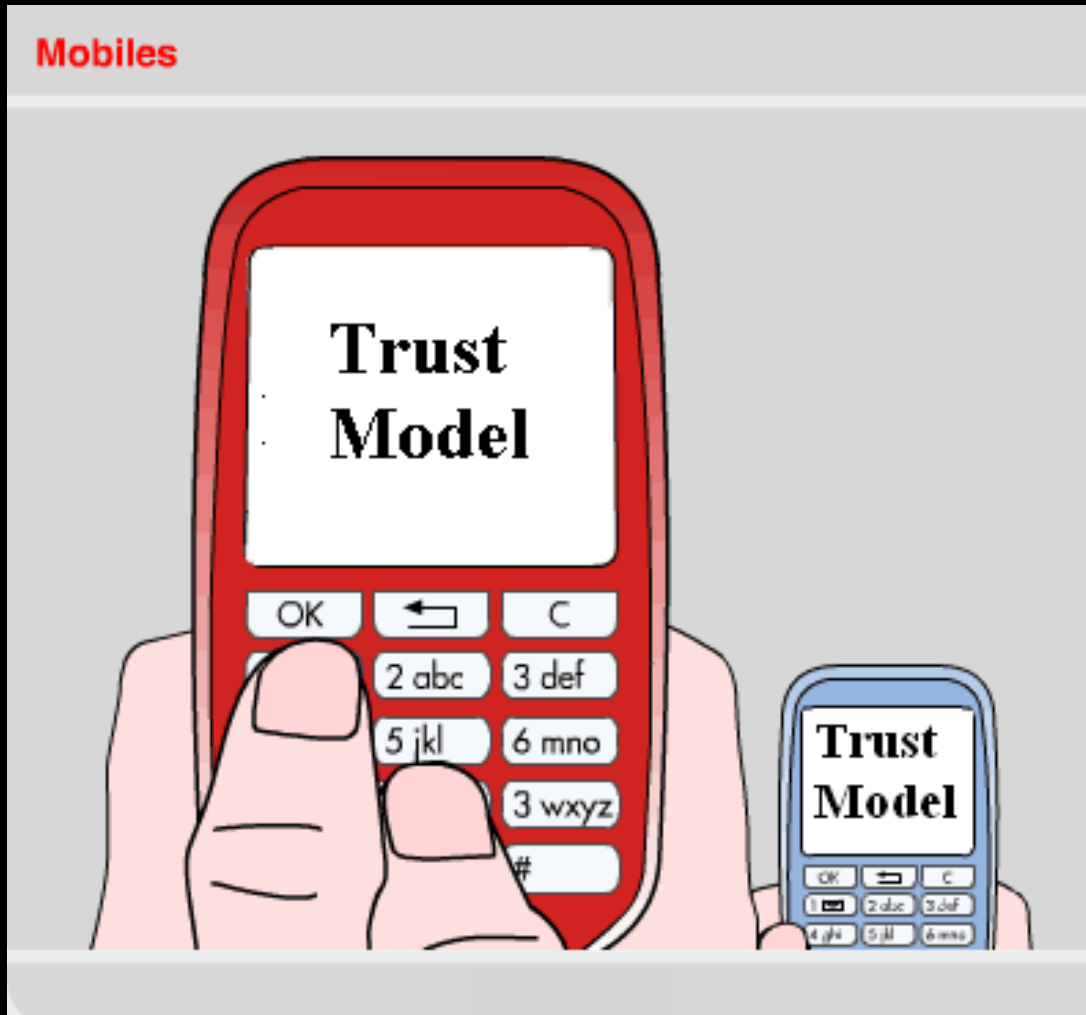
**Solution:** *Sellers* disseminate e-ads, and *visitors* collect them



**Problem:** Sellers may disseminate irrelevant ads



# Proposal:



They may keep track of  
which sellers send  
irrelevant ads



**Trust model on *A*:  
how *A* decides  
whether to rely on *B*  
to visit a stall**

To decide whether to rely on *B*, *A* has to  
**set its initial trust in B**

# **3 Existing Solutions**

1. Fixed values  
(☹ over-simplified)



2. Recommendations  
(☹️ fake ones)

# 3. Similar contexts (☹ universal ontology)

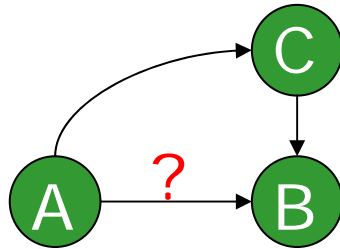
Two cases: B is

1. unknown
2. partly known

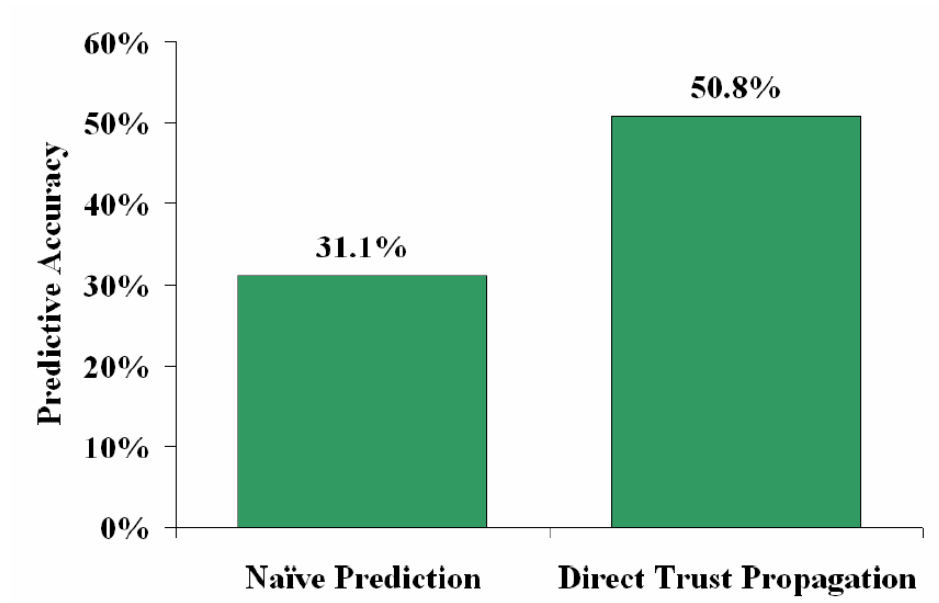
1. B is unknown

# Popular way:

Trust propagation (transitivity)

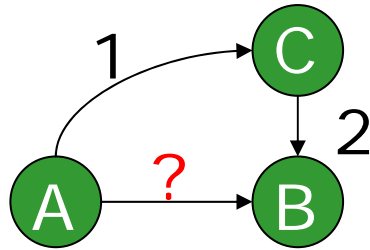


☹ Meant for the Web &  
Proved on “binary” ratings

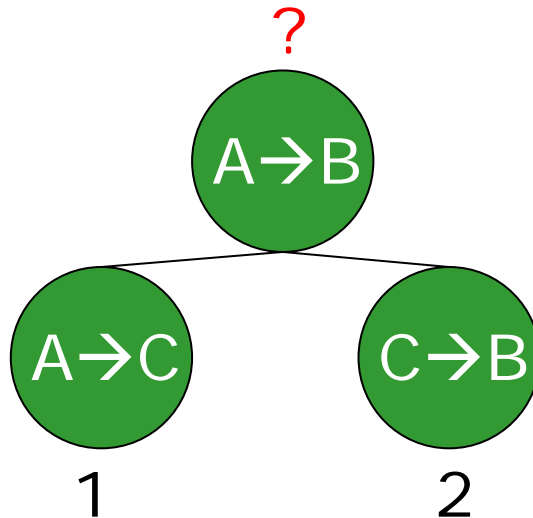


# Algorithm rating

- unrated *trust relationships* (needed)

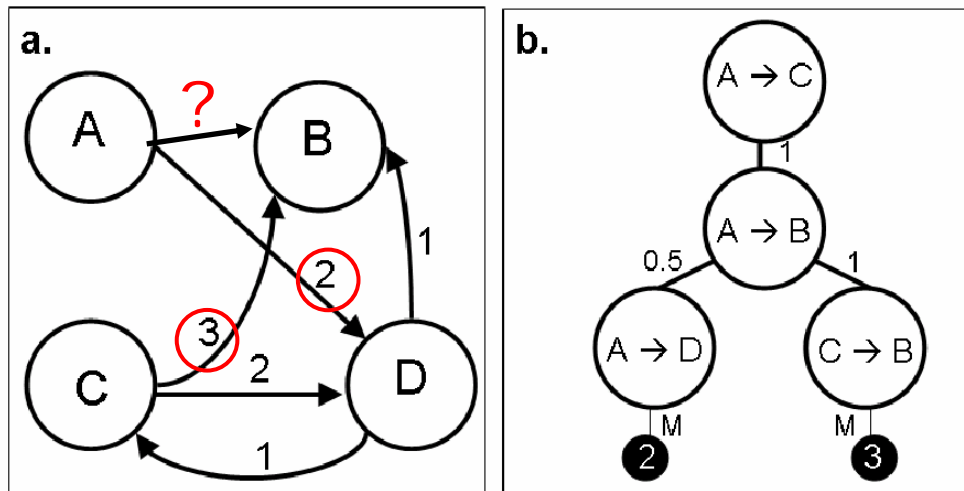


- unrated *nodes* (chosen)



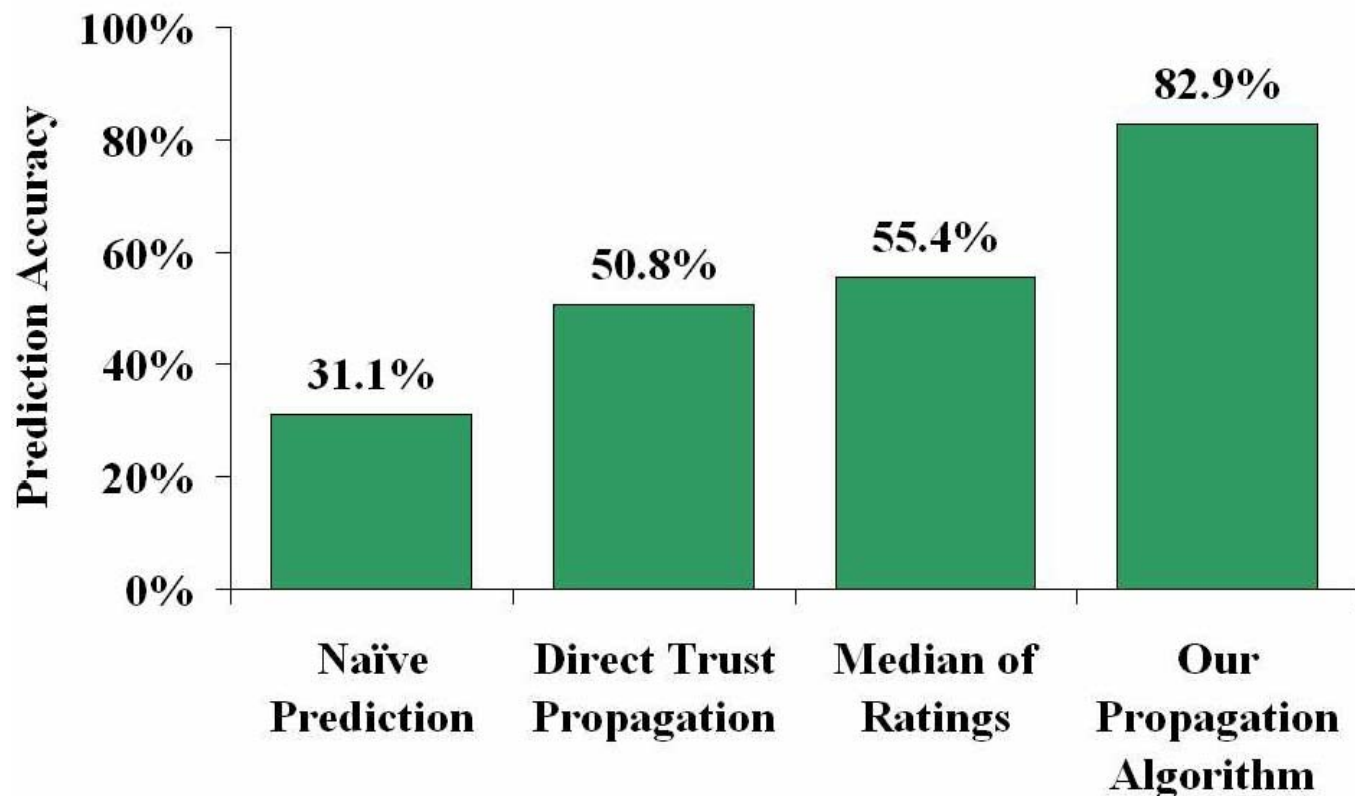
# Idea:

1. Similar nodes together
2. Find function:
  - same ratings for rated nodes
  - similar ratings for neighbours



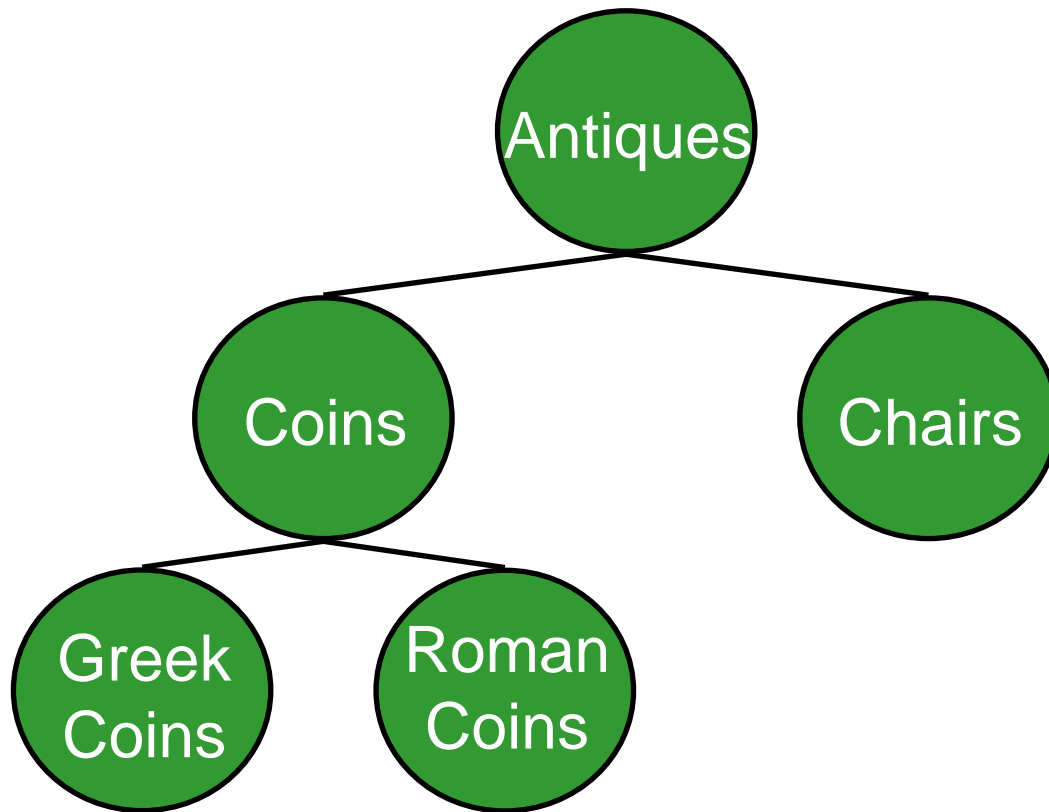


# Tested on real data (Advogato: > 55K user ratings)



2. B is partly known

# Popular way: Inter-context Lifting 😊



# Idea: Users ...

- > Don't share ontology
- > Extract "features"  
from their own ratings

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- > Don't share ontology
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from their own ratings

**How to extract?**

**S**ingular

**V**alue

**D**ecomposition

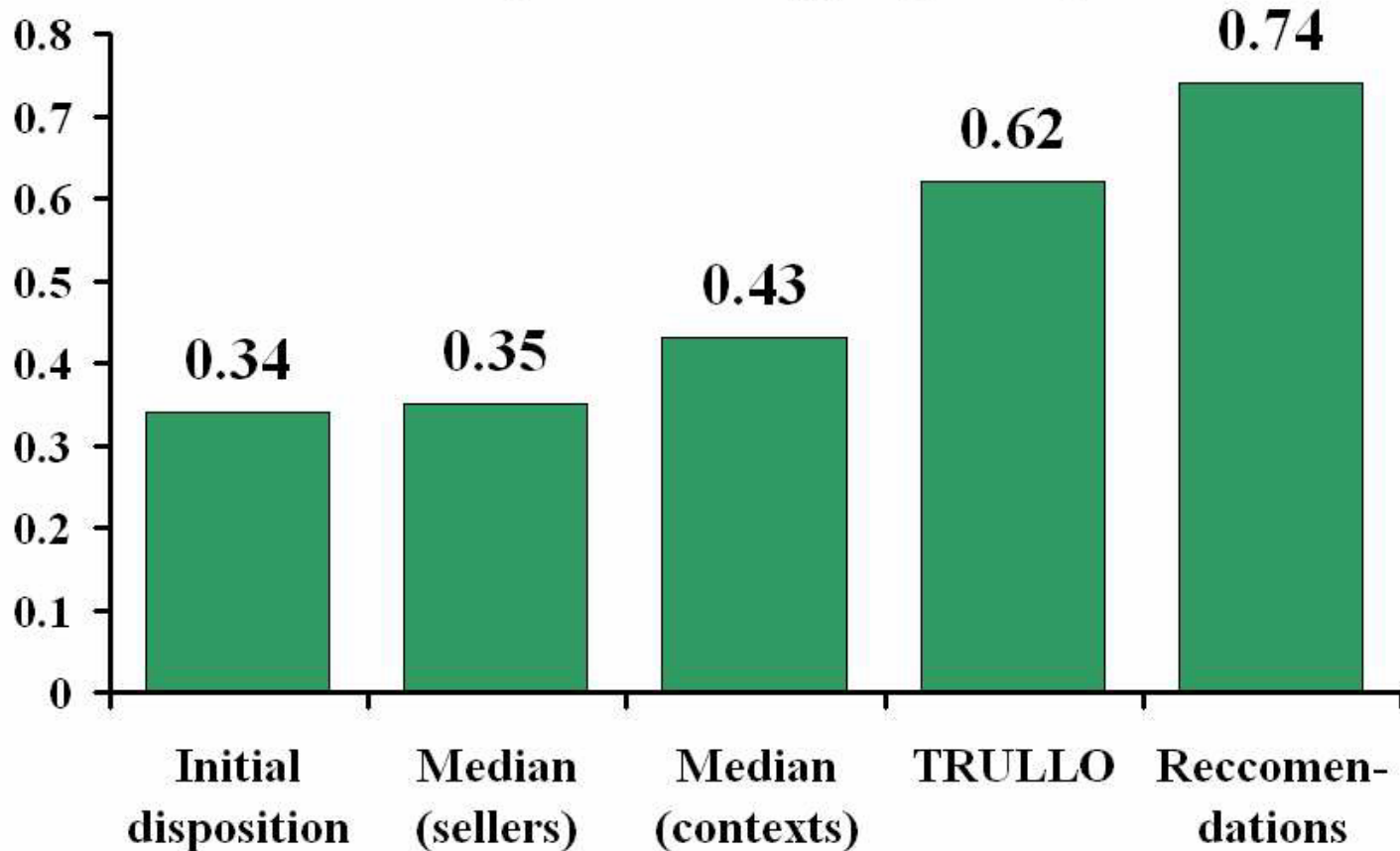
**Beauty:** features  
not user-specified  
**BUT** learnt





# Tested on simulation with real parameters

**Average bootstrapping utility**





Tested on Nokia 3230  
Max: 3.2 ms !

What I've told you is on  
"mobblog UCL" (google it)  
under tag: "bootstrapping"



**And User Privacy?**

# Private filtering

(Google for “mobblog private filtering”)

**And Resource Discovery?**

Folksonomy for mobiles 😊



**And Attacks?**

**Further Research  
(join mobblog !)**

