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Batch Techniques for Practical Private Information Retrieval

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Internet technology landscape

Privacy respecting

Actually useful

Societally desirable
Information retrieval

request

response
Private Information Retrieval (PIR)

• Fetch data without letting the database server learn what is being fetched

• Challenges:
  • High cost
  • Poor performance
  • Low expressiveness
  • Unrealistic assumptions
Killer apps

• Location-based services that don’t reveal your location
• Twitter-like system that doesn’t reveal your associates
• Amazon Kindle store that doesn’t reveal your interests
• Cloud storage that doesn’t reveal your access patterns
• DNS servers that doesn’t reveal your browsing habits
• Block chain queries that don’t link your wallets
• Targeted advertising that doesn’t facilitate discrimination
• Surveillance that doesn’t trample your civil liberties

• Your ideas?
THANK YOU

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