Information Management in the Year 2016

Major Accomplishments and Unsolved Challenges

Jennifer Widom

$$\frac{\text{World's bytes accessible by web search}}{\text{World's bytes}} \rightarrow 1$$

- Deep web is crawled

- Painless, seamless global data sharing and access

- "If Google hasn't found it, it doesn't exist"

2016: Major Accomplishment #2

DBMS's are fully self-managing

➢ Or else all critical data is served from a developing nation with cheap labor

2016: Major Accomplishment #3

Osama bin Laden's location identifed using data integration and mining techniques

➢ Unfortunately by the time the data analysis finished he was long gone

2016: Unsolved Challenge #1

$$\frac{\text{World's bytes ever actually read}}{\text{Bytes written}} \longrightarrow 0$$

Gap between size/diversity of data and ability to process it grows without bound

Spam!

Regardless of the new technology, spammers will adapt

2016: Unsolved Challenge #3

A general solution to *information integration*

- System, syntactic, and semantic

Still unsolved in **2026**

2016: Unsolved Challenge #3

A general solution to *information integration*

- System, syntactic, and semantic

Still unsolved in **2026**, **2036**

2016: Unsolved Challenge #3

A general solution to *information integration*

- System, syntactic, and semantic

Still unsolved in **2026**, **2036**, **2046**

2016: Unsolved Challenge #3

A general solution to *information integration*

- System, syntactic, and semantic

Still unsolved in **2026**, **2036**, **2046**, …