Web Intelligence and Big Data

introduction to the topic

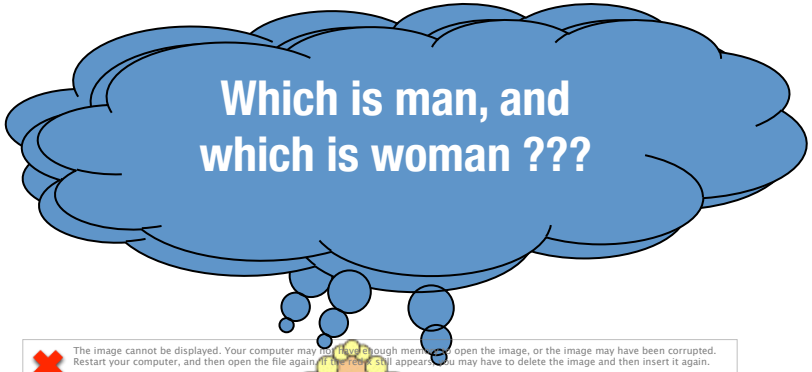
course outline and logistics

The *Reverse* Turing Test

Conversation…

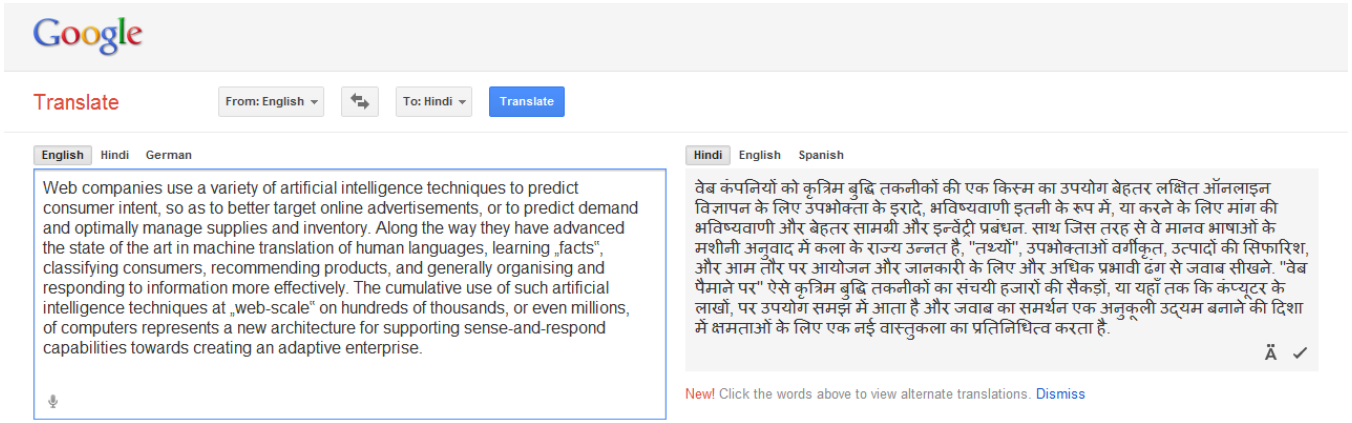
Like / Dislike
Shopper / Surfer
Rich / Poor
Ethnicity

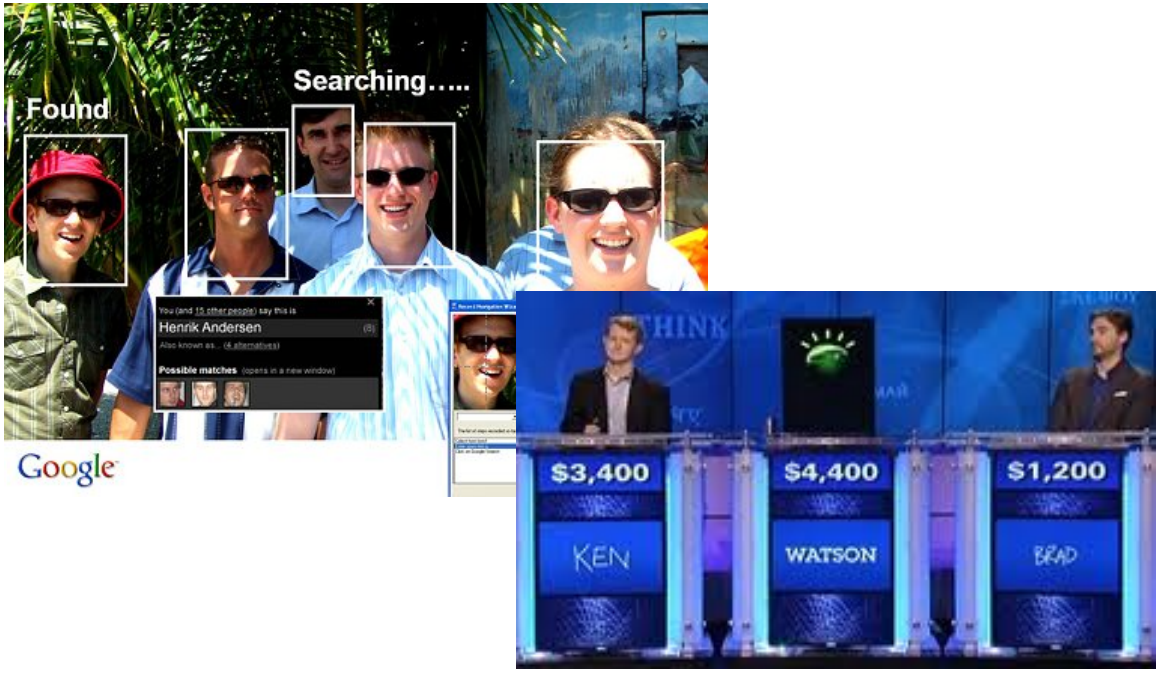
Conversation…



Happening (‘Imitation’ Game t

Web Intelligence: web-scale AI is *here*



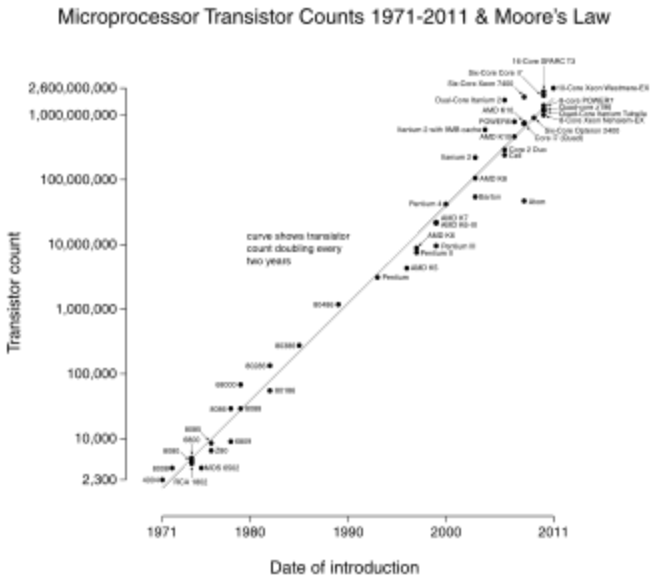


Big Data ?

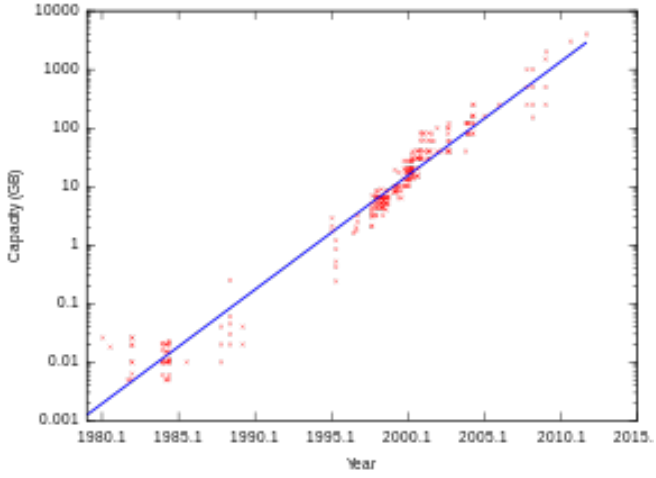
- lots and lots of web pages …
- a billion Facebook users
- billion+ Facebook pages
- hundreds of million Twitter accounts
- hundreds of million tweets per day
- Billions of Google queries per day
- Millions of servers, petabytes of data

In contrast, typical large enterprise:

- ❑ 5000-50,000 servers,
- ❑ Terabytes of data, millions of Txn/day



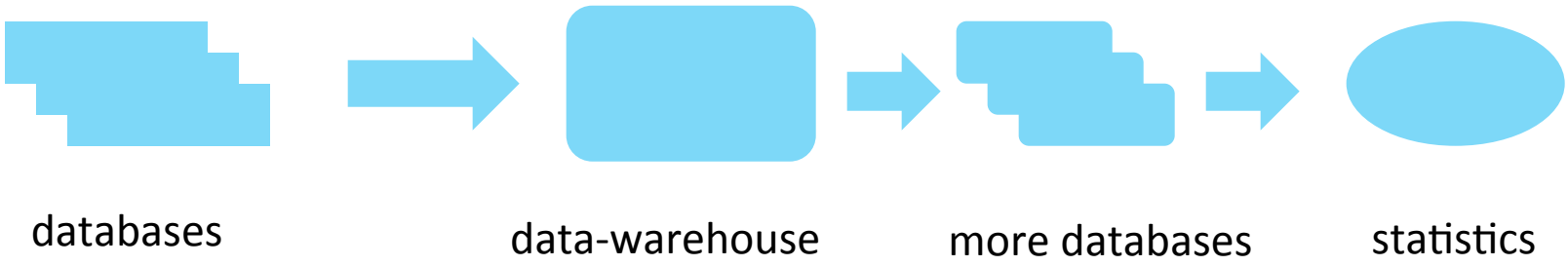
Moore's Law



Kryder's Law

Big-Data *technology*

traditional `business intelligence' using databases:



Google, Facebook, Linkedin, eBay, Amazon …
did *not* use `traditional' databases for `big data'
why?
what?

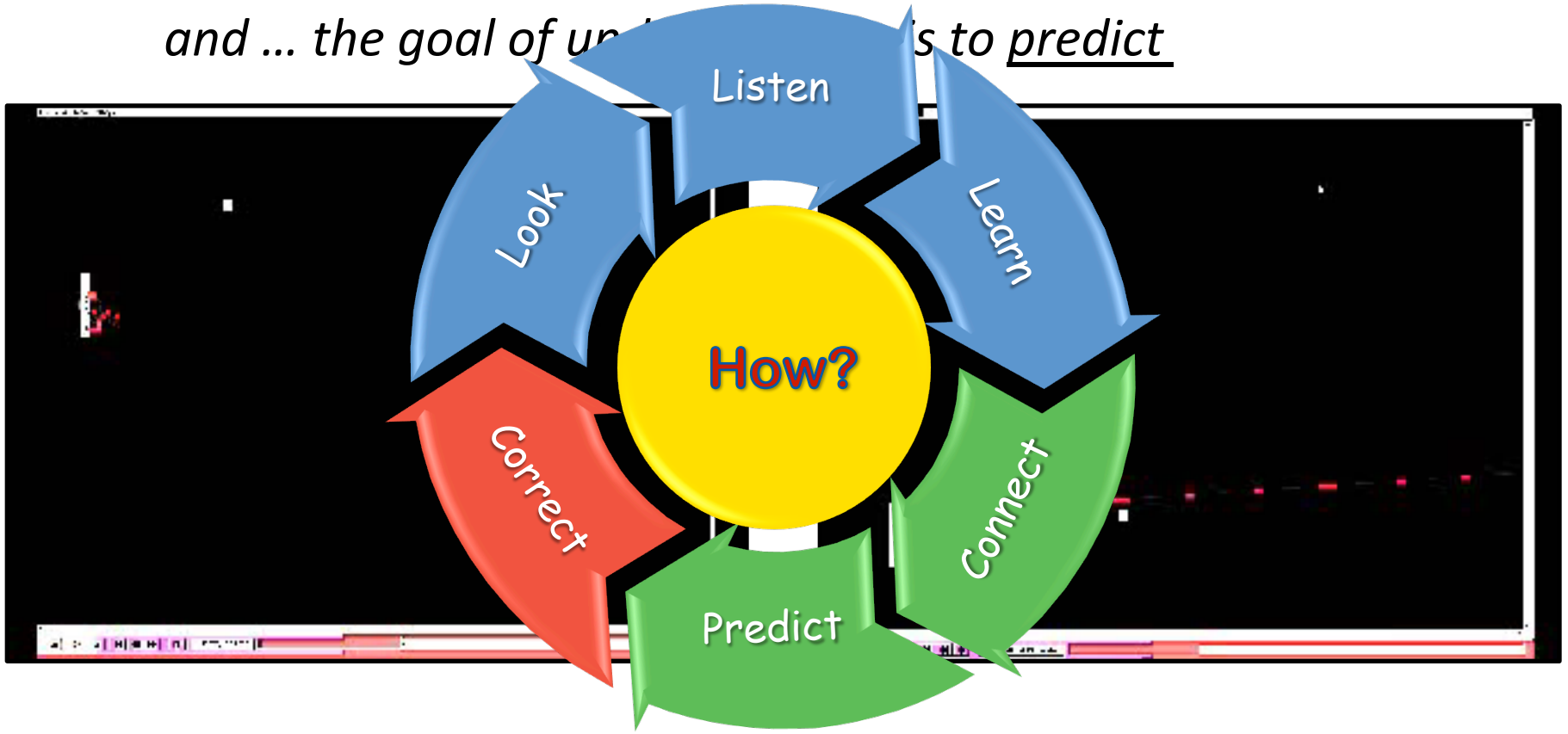
- *massive parallelism*
- *Map-Reduce paradigm*

what does *data* have to do with *intelligence*?

"any fool can know … the point is to understand."

- Albert Einstein

and … the goal of ur[illegible]s to predict



Reactive Intelligence

Predictive Intelligence

web intelligence using big data

AI techniques at web-scale for `predictive intelligence'

- online advertising – predicting intent and interest
- gauging consumer sentiment and predicting behavior
- detecting adverse events and predicting their impact
- intelligent question answering such as in Watson
- categorizing and recognizing places, faces, people, ..
- personalized genomic medicine of the future
- building more intelligent public services: energy, water
- securing ourselves better ….

big data analytics

exploiting more efficient technology developed by web companies for their web-intelligence tasks

fusing social intelligence and business intelligence

web-intelligence techniques on a mix of private and web data

- sales and marketing
- intelligent supply chains
- digital, mobile, *data-driven* business models and processes

"brick-and-mortar firms emulating web companies"

Web Intelligence and Big Data

"predict the future using AI and big data"

Look — Search

Listen — Machine Learning

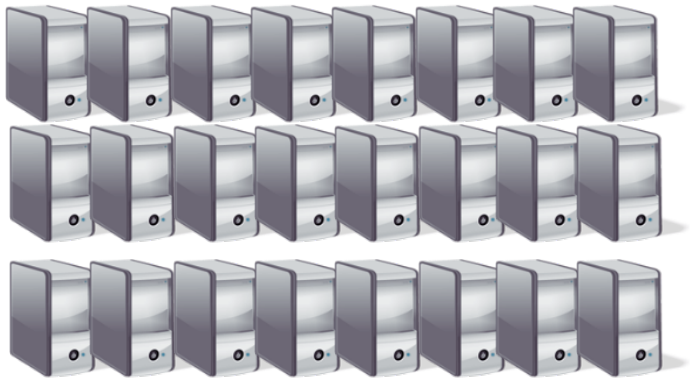
Learn — Information Extraction

Connect — Reasoning

Predict — Data Mining

Correct — *Optimization* (out of syllabus)

Big Data Technology — Load



parallel programming using map-reduce