



Designing AI Interfaces

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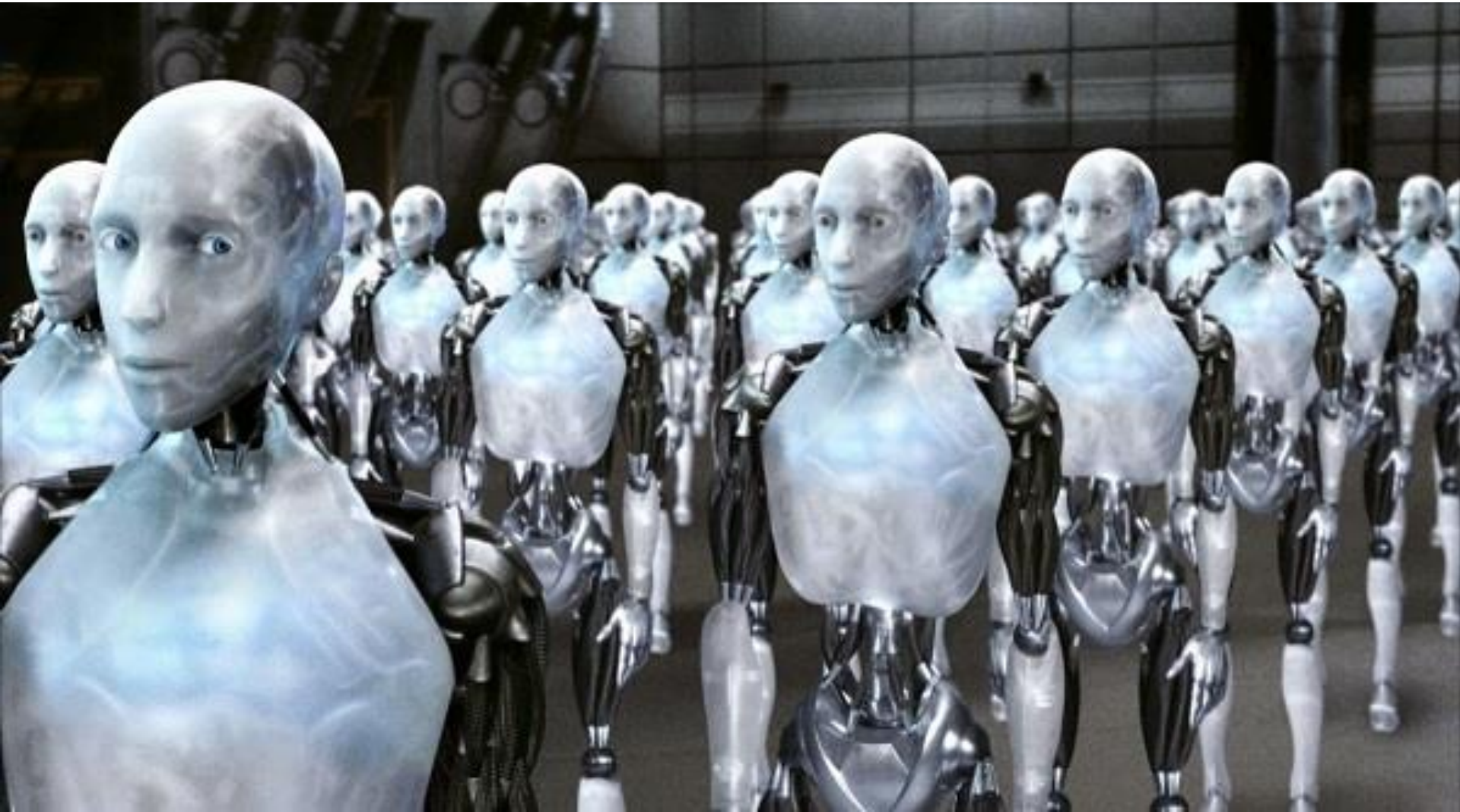
“It is the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable.”

“It passes the Turing test.”

“The study and development of intelligent agents.”

“Software that learns and completes tasks for you.”

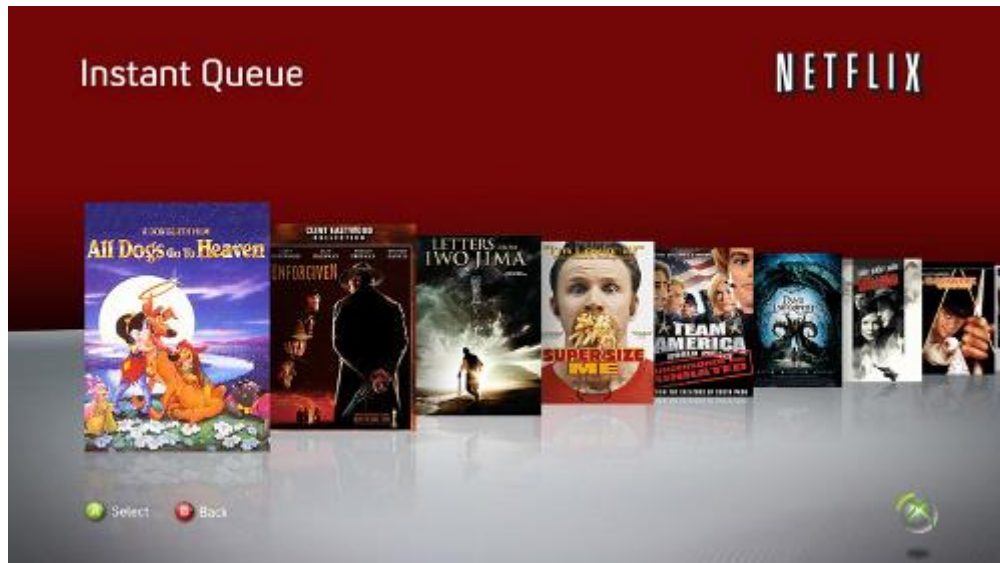
And then there is Hollywood's definition:



Raj: "What is AI?"

Nephew: "It's robots and shit..."

AI Has Been Omnipresent



Recommendation Engines - Implicit and Explicit Learning

Many have said Watson was the first mainstream demonstration of AI



But the purists say Watson is dumb!

Anticipatory: *“Predict your next want or action”*

Smart: *“Give me only the information I need”*

Assistant: *“Complete tasks for me”*

I have a smart phone but it's not smart!

Designing 95% UI

You don't know if your recommendations are right or wrong

What if the suggestion was wrong?

Certain apps are a lot more forgiving

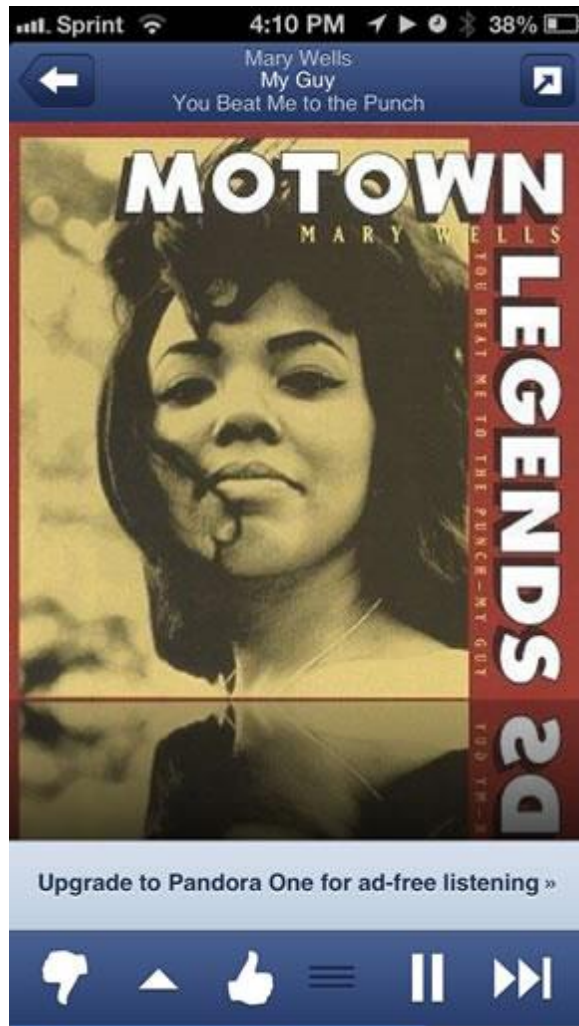
How does the user train the system?

Most survey that they will train but few actually do.

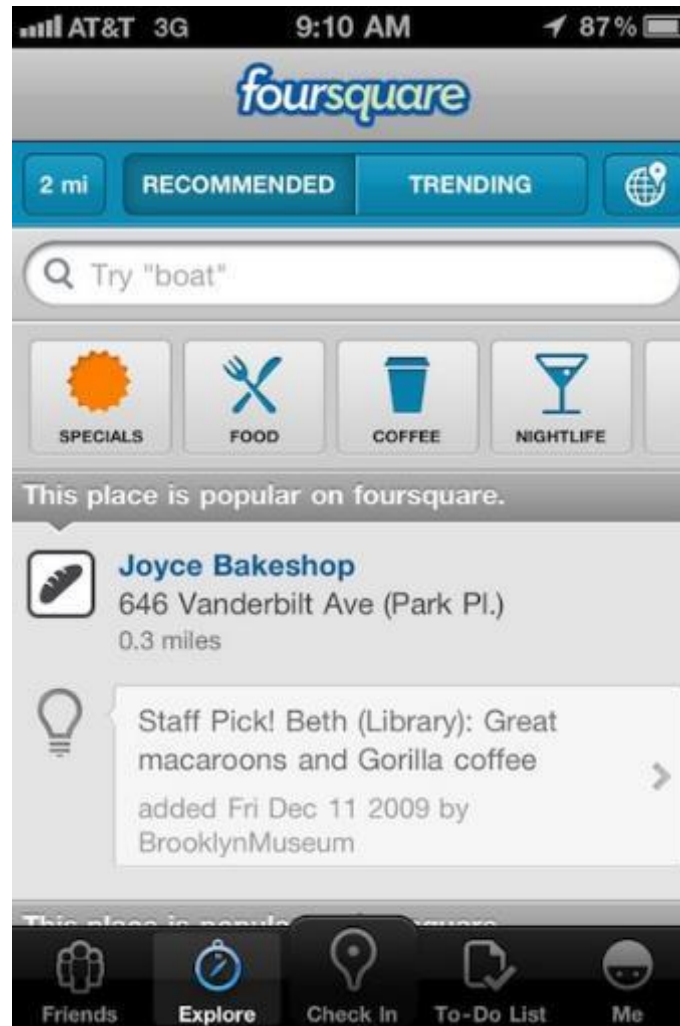
How do you get the data?

AI suffers from false starts.

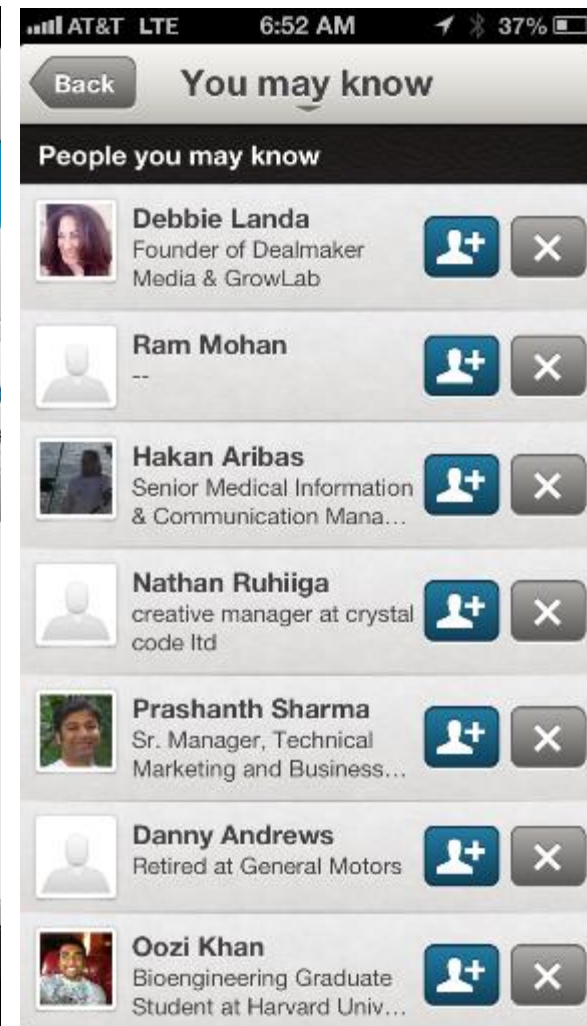
All that aside, anticipatory UI design is the next frontier!



Pandora

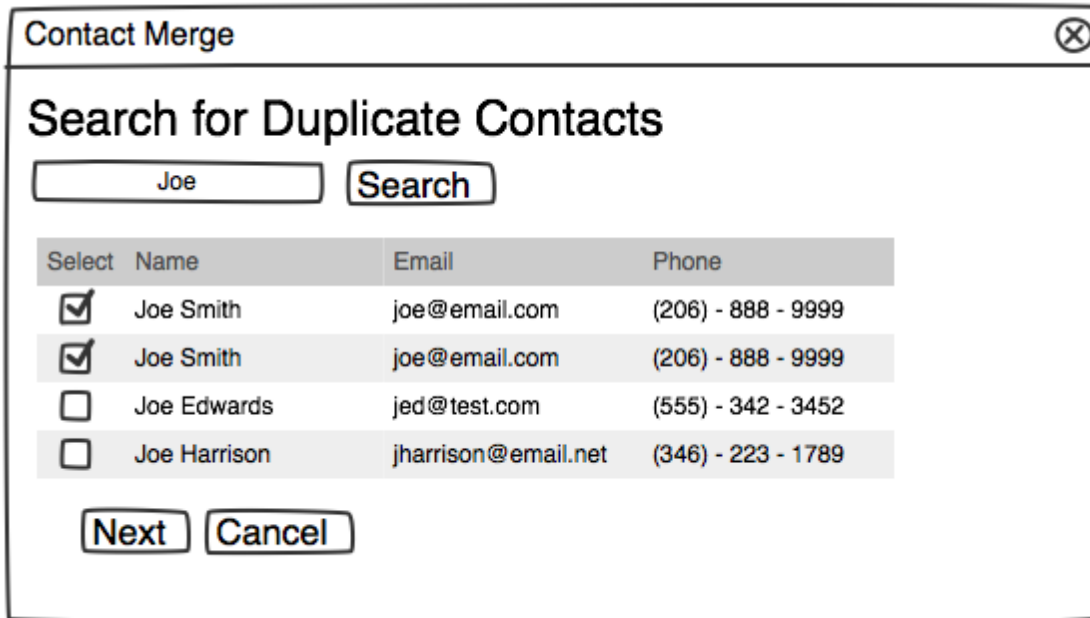


FourSquare



LinkedIn

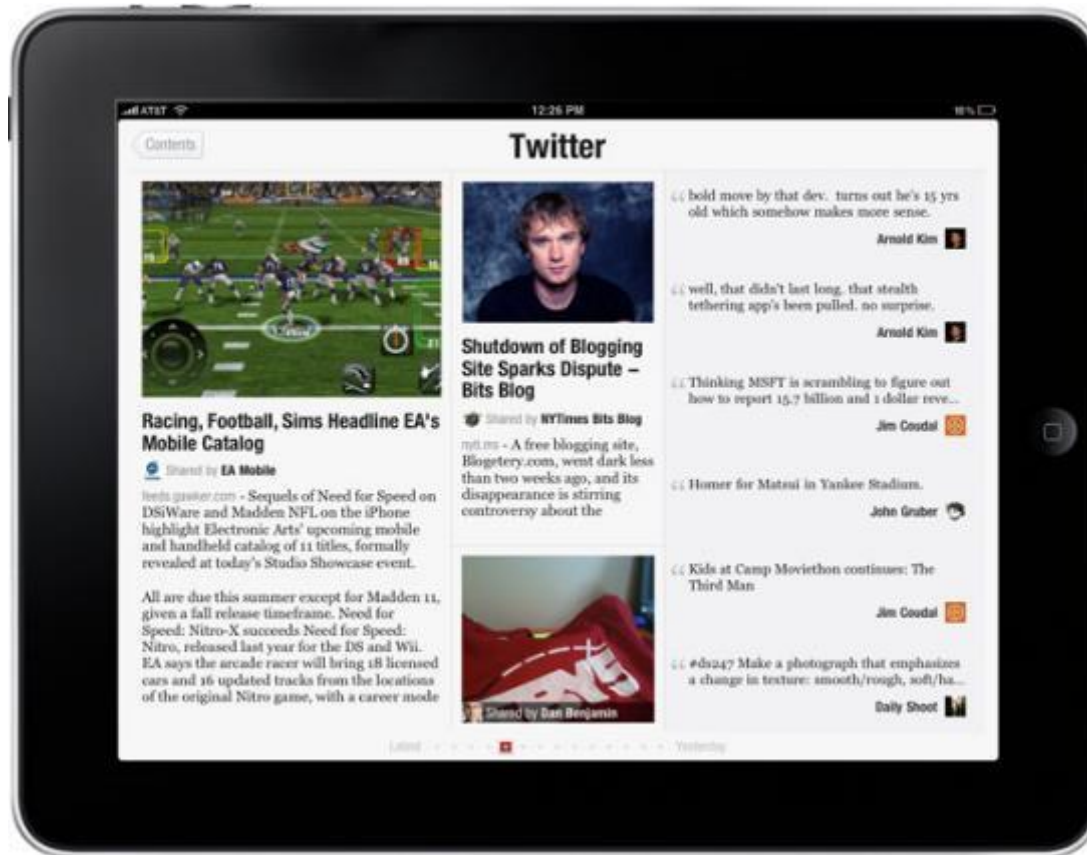
Does this bother you?



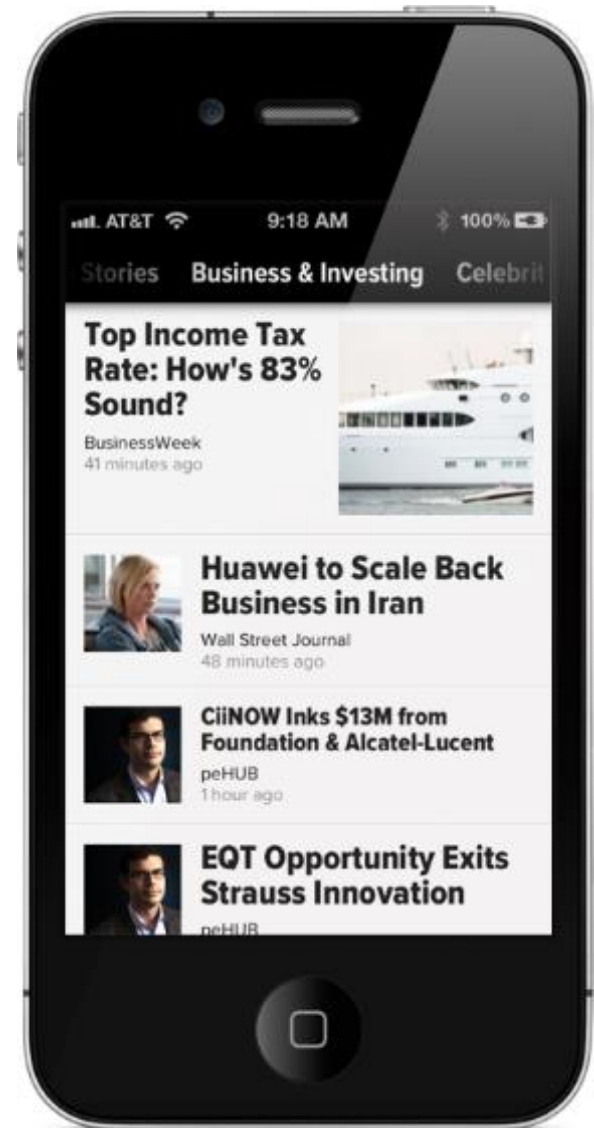
A screenshot of a 'Contact Merge' dialog box. The title bar says 'Contact Merge' with a close button. The main heading is 'Search for Duplicate Contacts'. Below it is a search input field containing 'Joe' and a 'Search' button. A table lists four contacts with checkboxes in the 'Select' column. The first two entries, both 'Joe Smith' with 'joe@email.com' and '(206) - 888 - 9999', have their checkboxes checked. The other two entries have unchecked checkboxes. At the bottom are 'Next' and 'Cancel' buttons.

Select	Name	Email	Phone
<input checked="" type="checkbox"/>	Joe Smith	joe@email.com	(206) - 888 - 9999
<input checked="" type="checkbox"/>	Joe Smith	joe@email.com	(206) - 888 - 9999
<input type="checkbox"/>	Joe Edwards	jed@test.com	(555) - 342 - 3452
<input type="checkbox"/>	Joe Harrison	jharrison@email.net	(346) - 223 - 1789

It does because these recommendations have right and wrong answers.

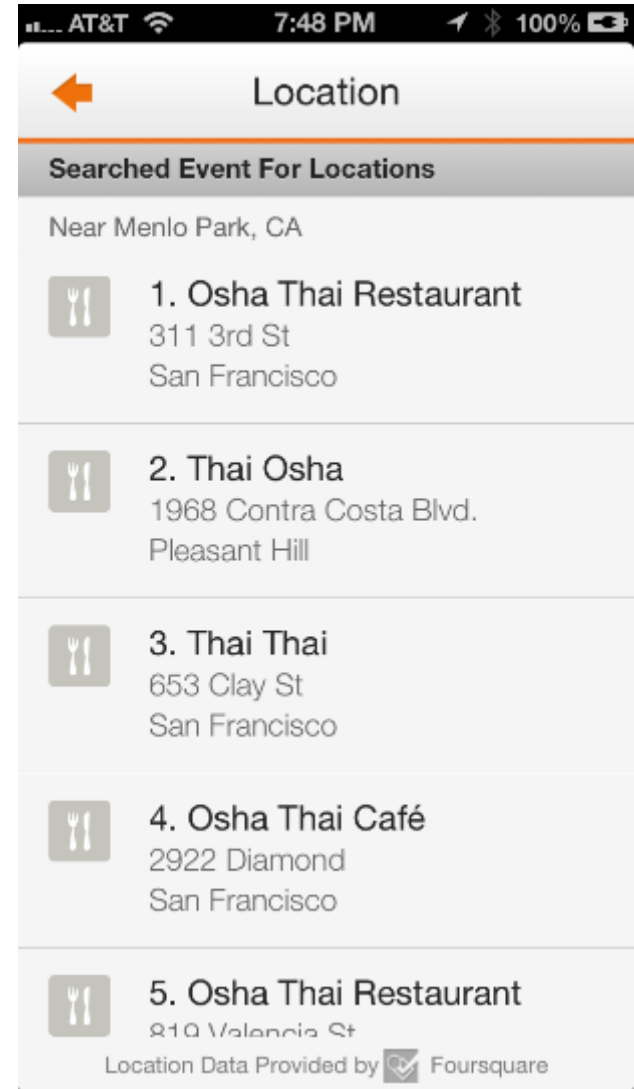


Little to No ML



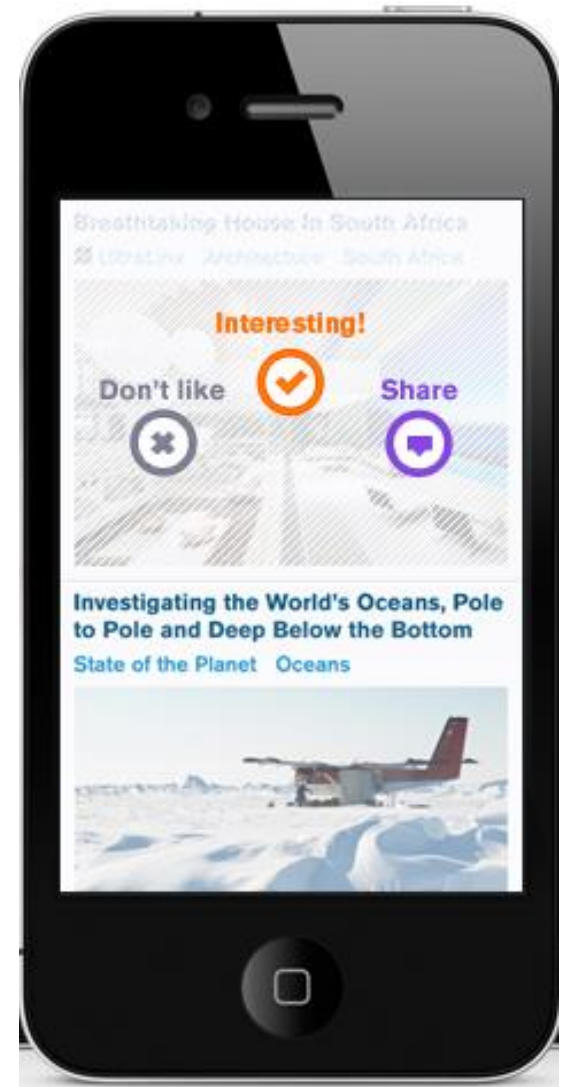
Extensive ML

- “Suggestions” – indicates intelligence
- “Recommendations” – slightly lower bar than “suggestions”
- “Searched/Results” – less intelligent



Tempo Searched Meeting Locations

- How do you determine the balance?
 - User testing doesn't always work
- Constrain the domain
 - Segment the users via cohort analysis
 - What is the right number of segments?
- The “More” button can be your best friend
 - Infinite scroll
- Train the system
 - Tempo user testing indicated less than 3% would train
 - Thumbs up/down, ratings vs implicit learning?



Siri is entertaining but being unconstrained killed their engagement



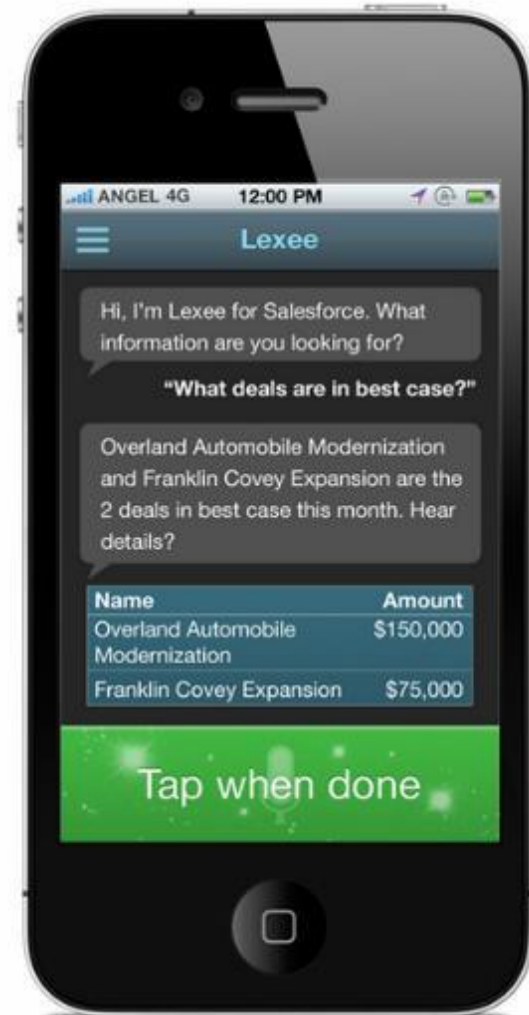
- It would annoy you less
- You know what you can ask and do
- You “set the expectations”

Examples

Automated support systems

TellMe / Free411

Salesforce Voice Access



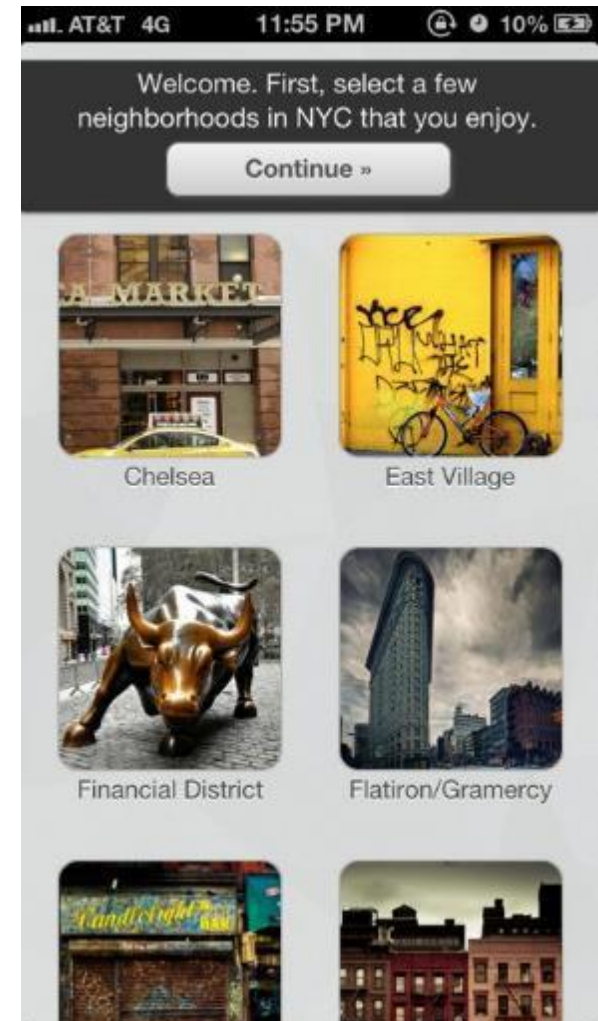
Lexee App Voice Commands
for Salesforce

- Animations work most effectively
 - But if it takes too long, it hinders the UX
- Speed of application directly correlated to retention rate
 - 15 search results vs 10 search results (Google Search Results)
- In Tempo, we numbered the results
- Search engines used to number their results as well



Numbered Results to Indicate Smarts

- False starts are very common
 - Introduce recommendations and anticipatory actions through use
- Keep on-boarding as light-weight as possible
 - Too much time between on-boarding and first-use will cause problems
 - Can you collect data as you go along
- First 3-Day usage will be heavy experimentation to see what the system does
 - Siri users experiment by asking a lot of Qs
 - Tempo users create 10s of mtgs in the first few days



Sosh Setup

- Anticipate without the noise
 - Push notifications drive repeat usage but if noisy result in bounced users
- Notifying you when to leave in Tempo
 - We wanted to be very anticipatory but we're not 95% yet
 - False notifications result in angst and a lost user



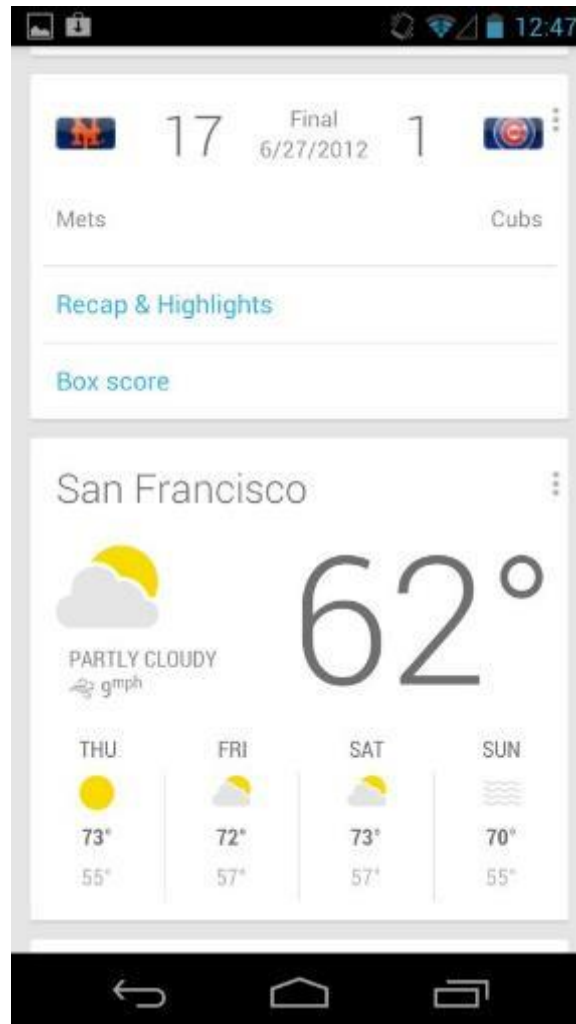
It's Just Beginning!

FourSquare



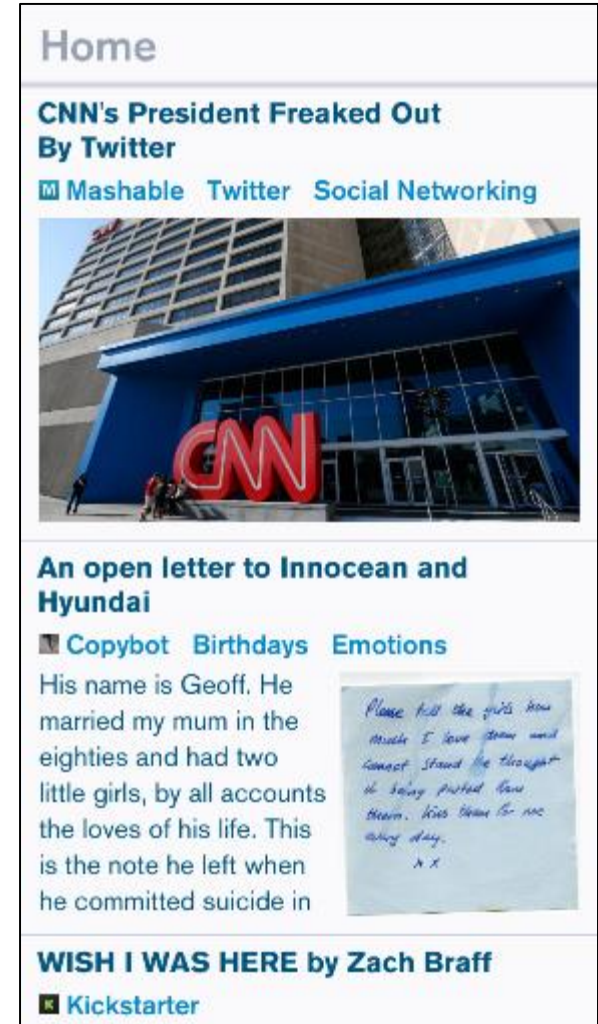
Big data to suggest places to explore

Google Now



Search history to become more anticipatory

Prismatic



Machine learning to suggest relevant news

- Recommendations work best when the user can't tell what's right or wrong.
- Be specific with your language because it helps set expectations
- Better to undersell and over-deliver
- Users will want to train the system but few will do it. Be conscious that training may create an aversive reaction
- Cold-starts are common; need to have a compelling case and integrate the user data over-time
- Use clustering / segmentation to improve the cold-start (eg choose your interests)
- Be sensitive about notifications and track engagement to machine learn on your notifications
- Understand that what you may think of as AI, the user thinks is dumb (and vice-versa); incorporate animations or other to indicate AI

What does smart mean in every core app?



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