Talk the Talk:
Communicating with the Non-Coder

Ellen Friedman
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Hashtag today: #bbuzz

Agenda

- Is there a problem?
- Does it matter to you?
- How can you make it better?
- Homework
- A parrot joke

Not necessarily in that order….

Is there a problem?

Trying to Talk to Non-coders

How does it feel for a really technical person to talk to people less technical?

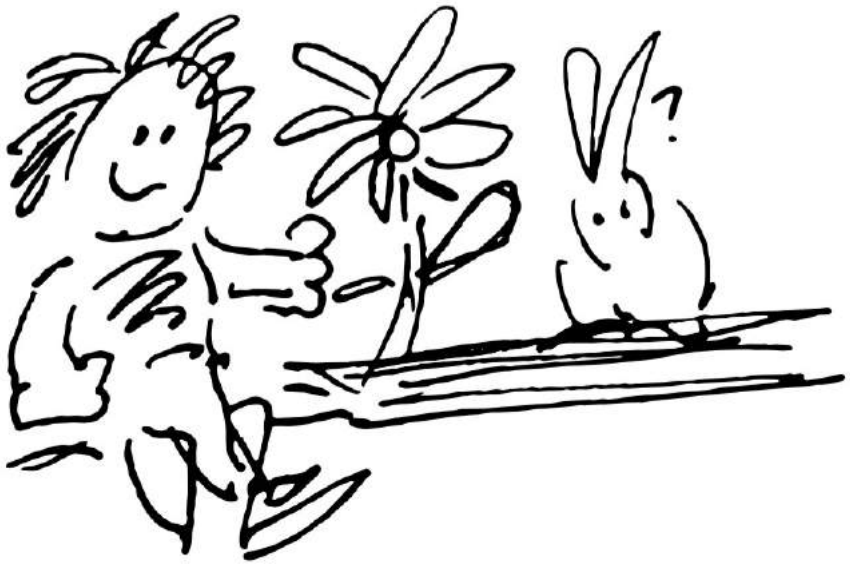
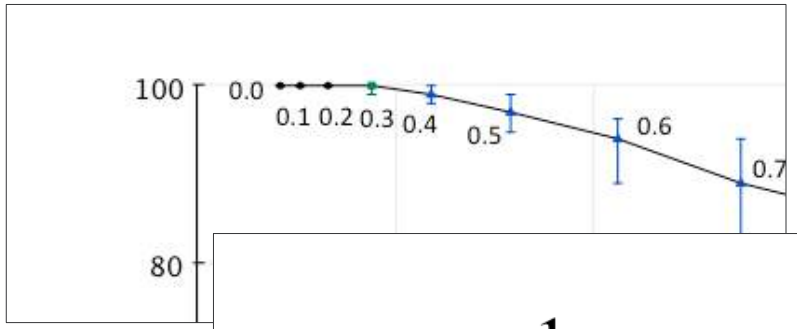


Image credit: © 2015 Ellen Friedman
Rabbit's name unknown

Photo credit: Philipp Kaderman, at Buzzwords
Guy in red hat is Ted Dunning

What do people think when they see this?



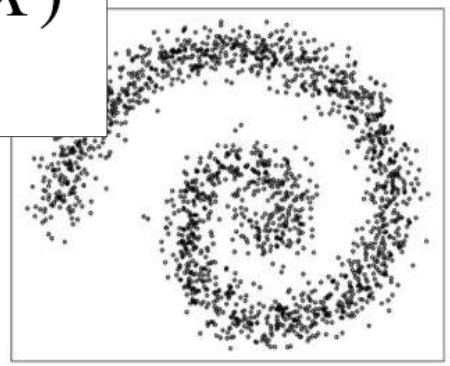
$$\Delta_4^2(X) > \frac{1}{\sigma^2}\Delta_5^2(X)$$

$$\begin{bmatrix} \mathbf{A}_1 & \mathbf{A}_2 \end{bmatrix}^T \begin{bmatrix} \mathbf{A}_1 & \mathbf{A}_2 \end{bmatrix} = \begin{bmatrix} \mathbf{A}_1^T \\ \mathbf{A}_2^T \end{bmatrix} \begin{bmatrix} A_1 & A_2 \end{bmatrix}$$

$$= \begin{bmatrix} \mathbf{A}_1^T\mathbf{A}_1 & \mathbf{A}_1^T\mathbf{A}_2 \\ \mathbf{A}_2^T\mathbf{A}_1 & \mathbf{A}_2^T\mathbf{A}_2 \end{bmatrix}$$

$$\begin{bmatrix} \mathbf{r}_1 \\ \mathbf{r}_2 \end{bmatrix} = \begin{bmatrix} \mathbf{A}_1^T\mathbf{A}_1 & \mathbf{A}_1^T\mathbf{A}_2 \\ \mathbf{A}_2^T\mathbf{A}_1 & \mathbf{A}_2^T\mathbf{A}_2 \end{bmatrix} \begin{bmatrix} \mathbf{h}_1 \\ \mathbf{h}_2 \end{bmatrix}$$

$$\mathbf{r}_1 = \begin{bmatrix} \mathbf{A}_1^T\mathbf{A}_1 & \mathbf{A}_1^T\mathbf{A}_2 \end{bmatrix} \begin{bmatrix} \mathbf{h}_1 \\ \mathbf{h}_2 \end{bmatrix}$$



O(κ *k d* + *k*³ *d*) = O(k²
for small *k*, high qualit
O(κ *d* log *k*) or O(*d* log κ log *k*) for larger *k*, looser quality

```
ty 4
_orderpriority, count(*) AS order_count
 o
rderdate >= date '1996-10-01'
.o_orderdate < date '1996-10-01' + interval '3' month
AND EXISTS(
            SELECT * FROM lineitem l
            WHERE l.l_orderkey = o.o_orderkey
            AND l.l_commitdate < l.l_receiptdate
            )
GROUP BY o.o_orderpriority
ORDER BY o.o_orderpriority;
```

Techies enjoy a blast of code or algorithms…

Attribution for image unfound

But what about everybody else?

Your message can get lost in technical jargon

Is what you know important?

If so, it deserves to be presented in a way your audience can appreciate it

Don’t drown your message in technical details & jargon

Do shape your message to fit the situation

There is a problem...

But does it matter?

Have you felt like this?

“*Our company has a new strategic initiative to maximize brand loyalty.”*

“We need you to draw 7 red lines, all strictly perpendicular, some with green ink & some with transparent ink.”

“Can you do that?”

“The Expert” also known as “7 Red Lines”
http://bit.ly/7-red-lines

Some non-coders are worth listening to…

Image © Ellen Friedman 2015

“Steve Jobs didn’t ever code… and he wasn’t an engineer.”

- Steve Wozniak,
Apple co-founder

Aug 2013 blog
http://bit.ly/woz-blog

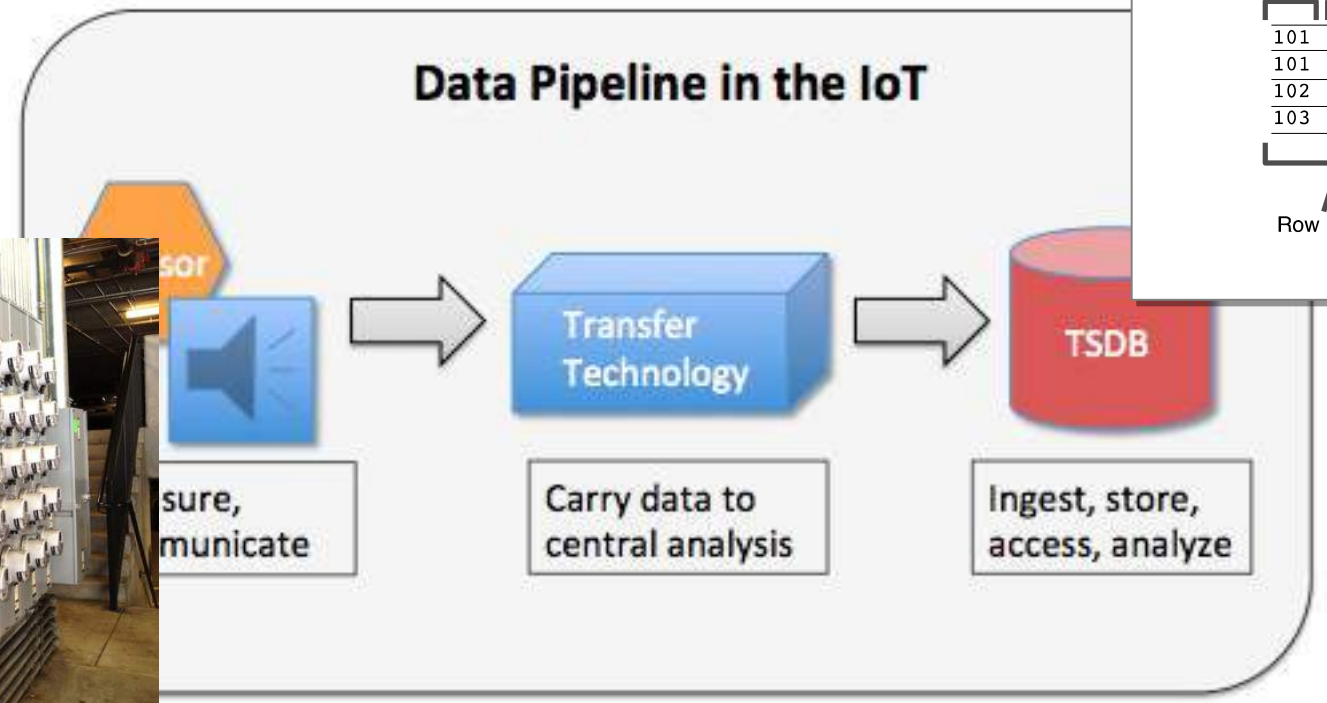
Why does it matter?

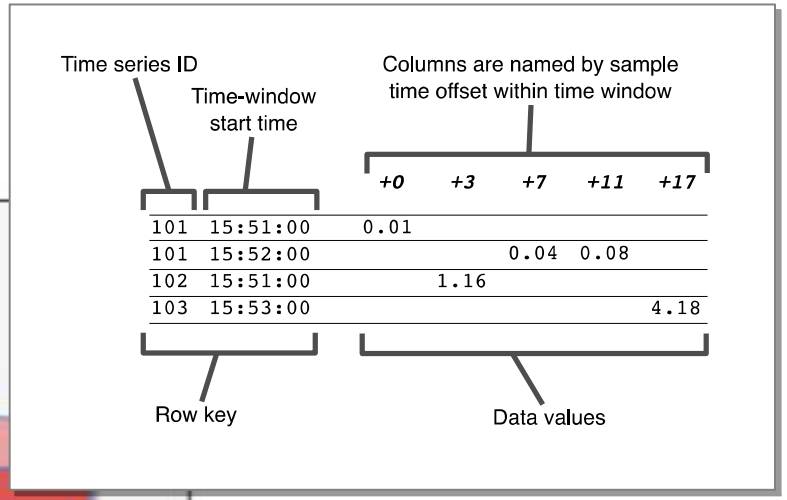
Sometimes you need to talk to non-coders because they fund your work

Communication helps set reasonable expectations

- What resources are required – will your team have what it needs?
- What resources are available?
- Is the time-to-market reasonable?
- How good is good – what constitutes success?

Domain knowledge is important: Example is IoT





Example: Changing a society

1.2 B

PEOPLE

Aadhaar Project: Largest Biometric DB in the World

- Unique 12 – digit number for each person in India
- Proof of identity, authenticated anytime, anywhere
- Runs on NoSQL database MapR-DB

AADHAAR

Talking across teams

- **Good news**: your technical skills are of value in a wide variety of situations

- **Challenge**: this means you need to be able to talk to people with a wide variety of skill sets and knowledge

Lesson 1:

It's worth fixing the problem

Lesson 2:

It's worth fixing the problem

But how?

Parrot Joke

Lesson 2:

Show that your ideas are of value

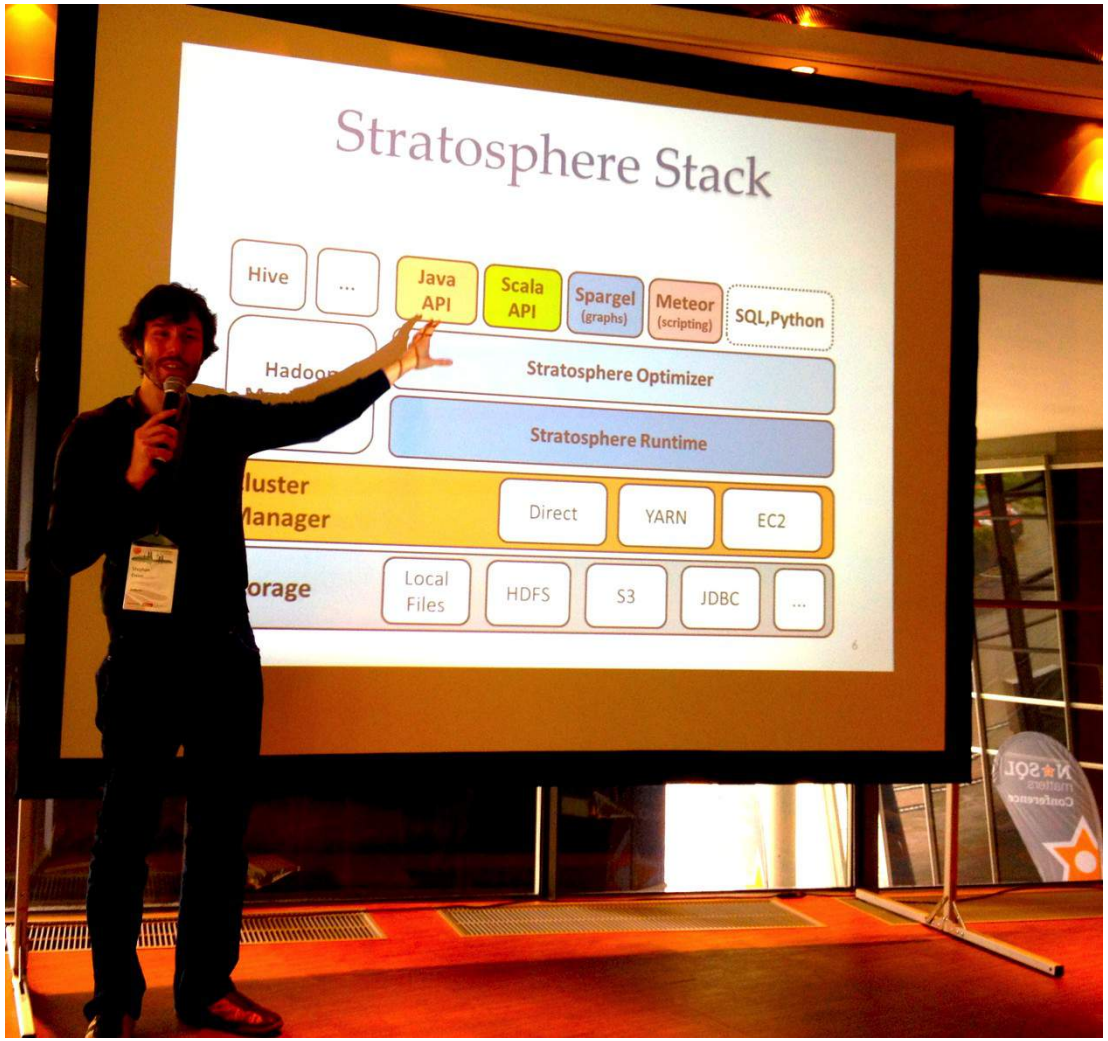
Lesson 3:

Adjust your style of communicating

There’s more than one way to explain things…

Photo credit: Ellen Friedman © 2013
Sebastian Schelter & KostasTzoumas #bbuzz pre-Apache Flink

Diagrams help convey key ideas



The right diagram can establish relationships in a way the audience will remember.

Details can be added later, building on this framework.

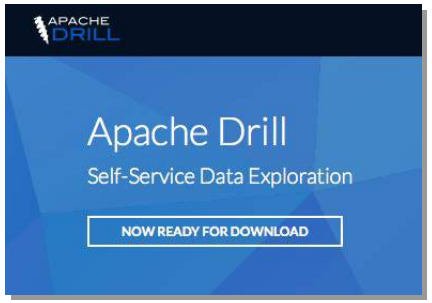
Photo credit: Ellen Friedman ©2014
Stephan Ewen, NoSQL Matters,
when Apache Flink was still called Stratosphere

Best ways to communicate

- **Choose language** that works
- Try **alternatives** to word explanations:
  - **Diagrams:** plant concepts and give the listener a reference on which to build connections and details
  - **Demos:** Showing instead of just describing can be useful
  - **Request input** (not just “are there any questions”?
- Find out **what the other team thinks/ needs/ wants**
- Build understanding in **layers**
- **Empathize:** what does your audience see/ hear?

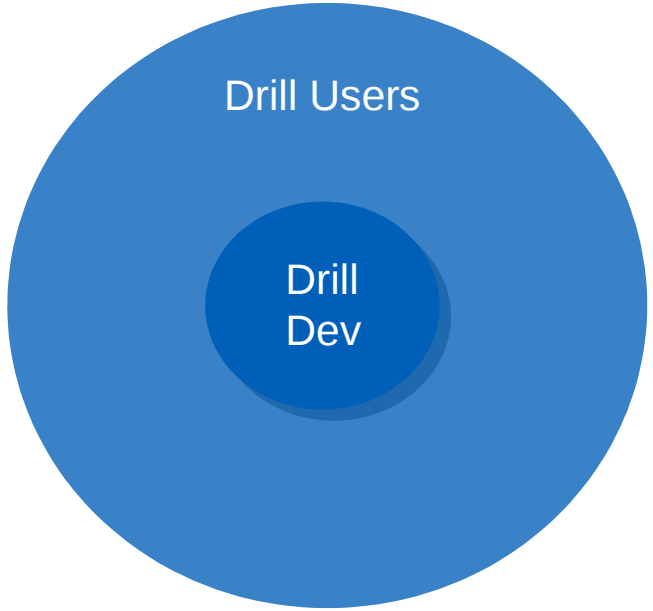
If you build it, will they come?

Example: Apache Drill 1.0 just released

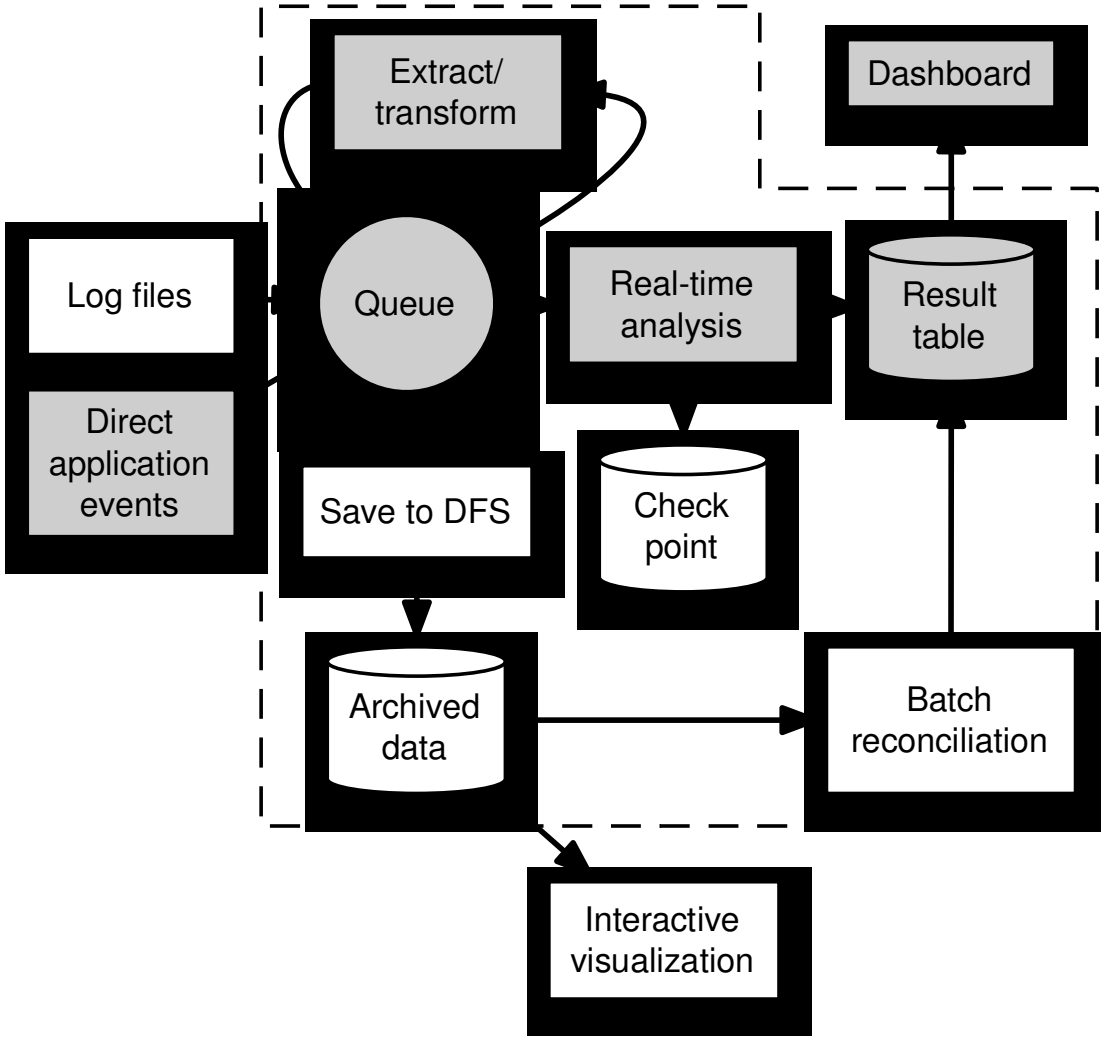


You built it – now you want people to use it

- Change your message
- Expand community from developer to users



Test what people “see” in your message



Lesson 4:

Find the *essential* concepts in what you do

Essential Concepts: The core of what you do

- *Not* the same as generalized statements
- Refine content down to find the most important ideas
- May be simple or complex: what matters is that they are powerful

Get past details to discover key concepts

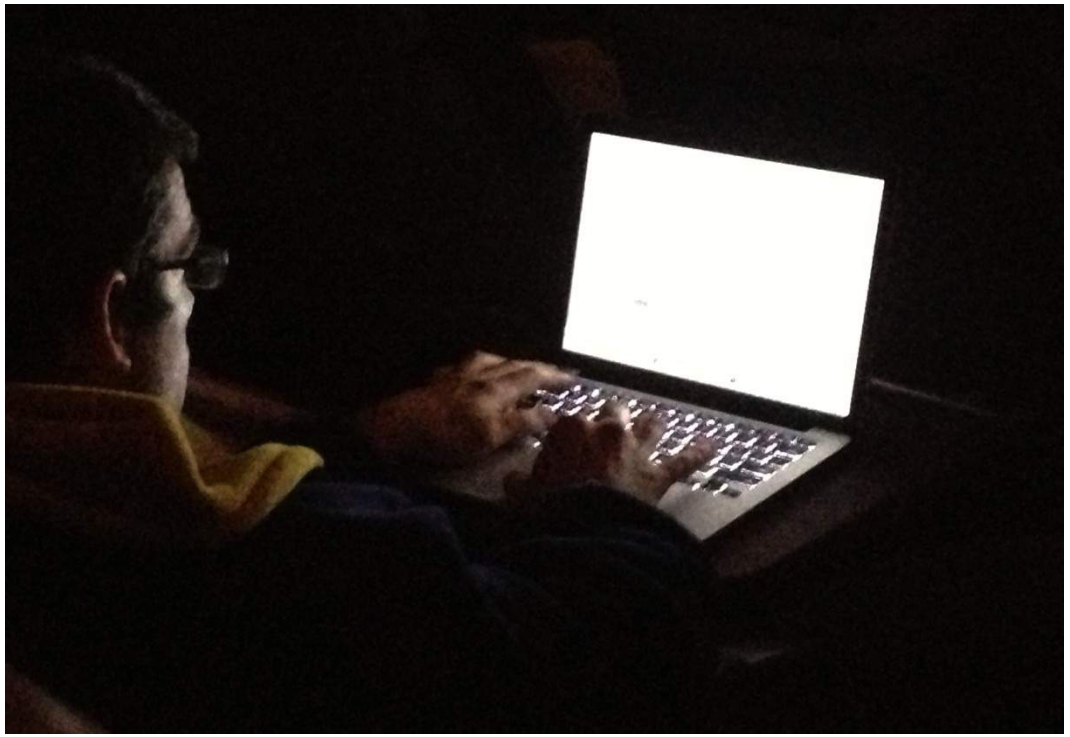


Image © Ellen Friedman 2014
Apache Drill founder Tomer Shiran at work

Helps you be clever

Helps you communicate

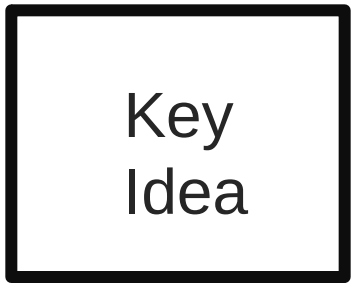
Helps you distinguish

- *practical goals &*
- *technical solutions needed to address them*

Lesson 5:

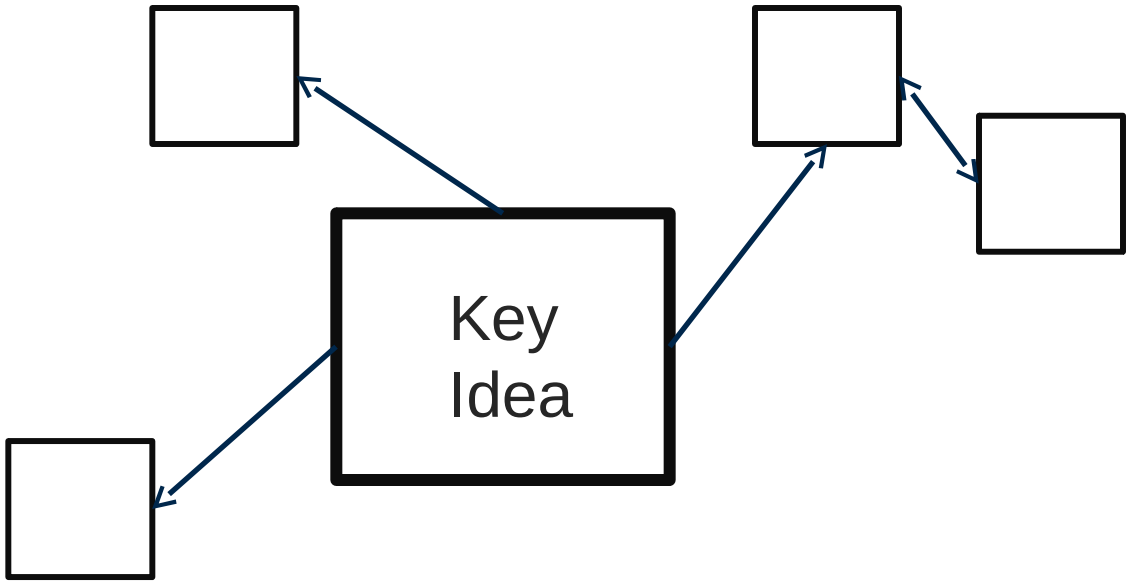
Distinguish between goals & solutions

Build understanding in layers



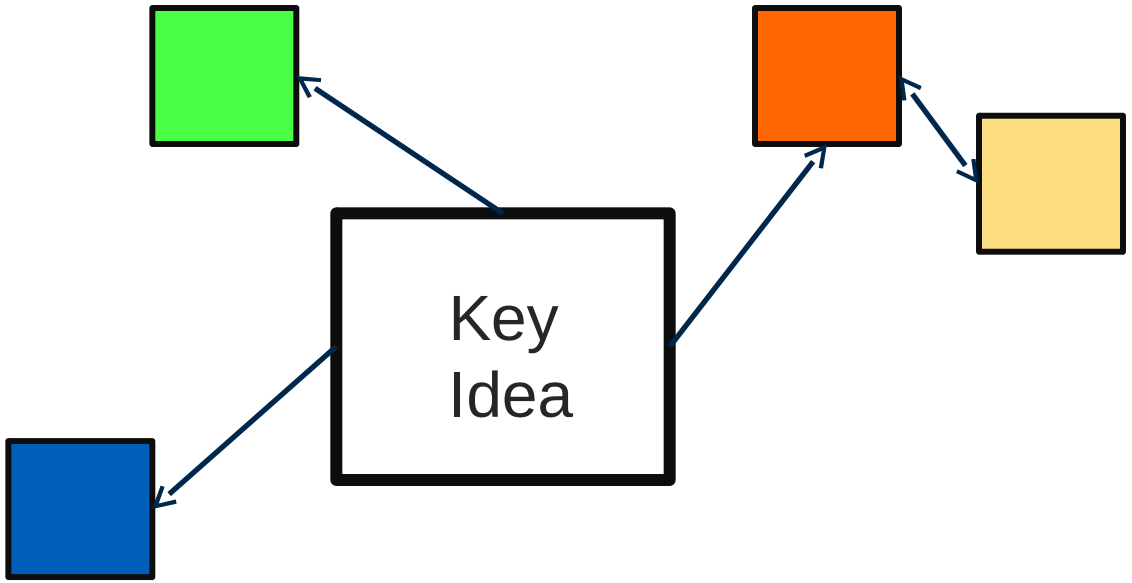
- Start with essential concepts

Build understanding in layers



- Start with essential concepts
- Build connections and add details in layers

Build understanding in layers



- Start with essential concepts
- Build connections and add details in layers
- Helps understanding and recall

Lesson 5:

Go more than ½ way to build an understanding

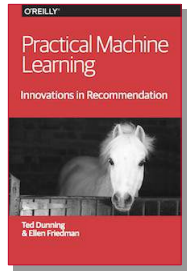
Example: Practical Machine Learning

Practical Machine Learning: innovations in Recommendation on display at O'Reilly Strata conference

You never know who will be your audience…

Unknown pony + Ellen Friedman, 2014

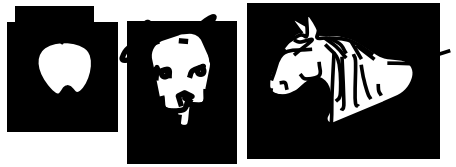
How to Build a Simple Recommender

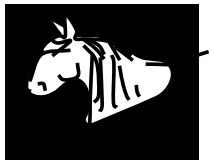


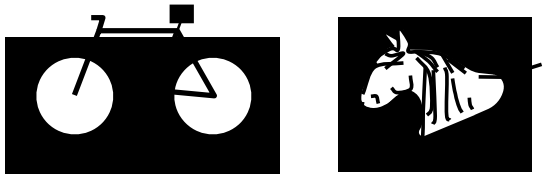
- Exploit search technology to easily deploy recommender
- Best source of data: What people do (not ratings)
- Offline/ Online two part design for efficiency
  - Training model takes place offline
  - Delivering rapid response recommendation online
- Model uses co-occurrence of items to decide what to recommend
  - Apache Mahout's `ItemSimilarityJob`
  - Uses LLR
- Use techniques like dithering & anti-flood to make it better

Recommendations

Alice 

Bob 

Amelia  ?

Charles 

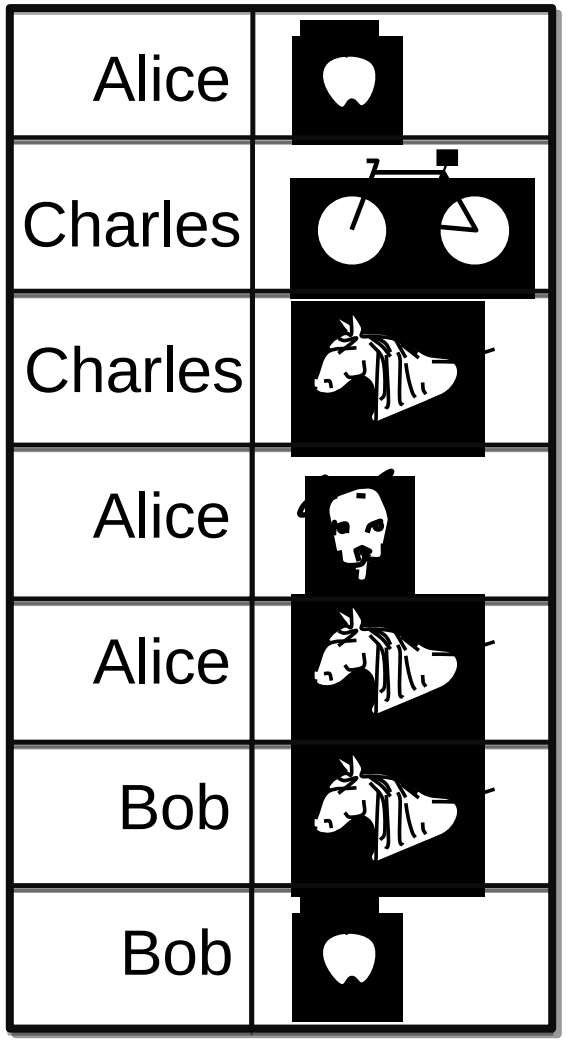
What if everybody gets a pony?

What else would you recommend for new user Amelia?

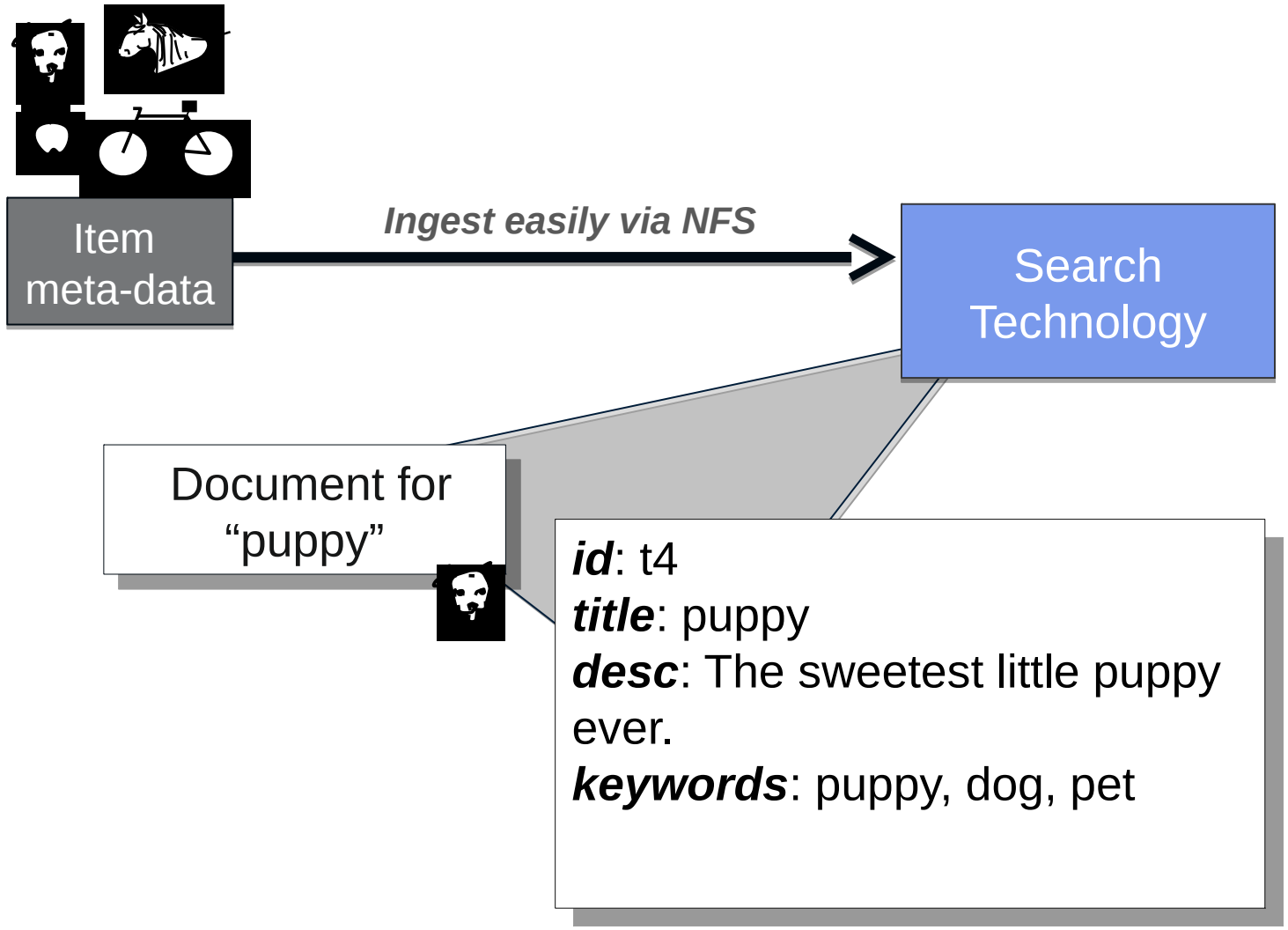
Log Files

u1	t1
u2	t4
u2	t3
u1	t2
u1	t3
u3	t3
u3	t1

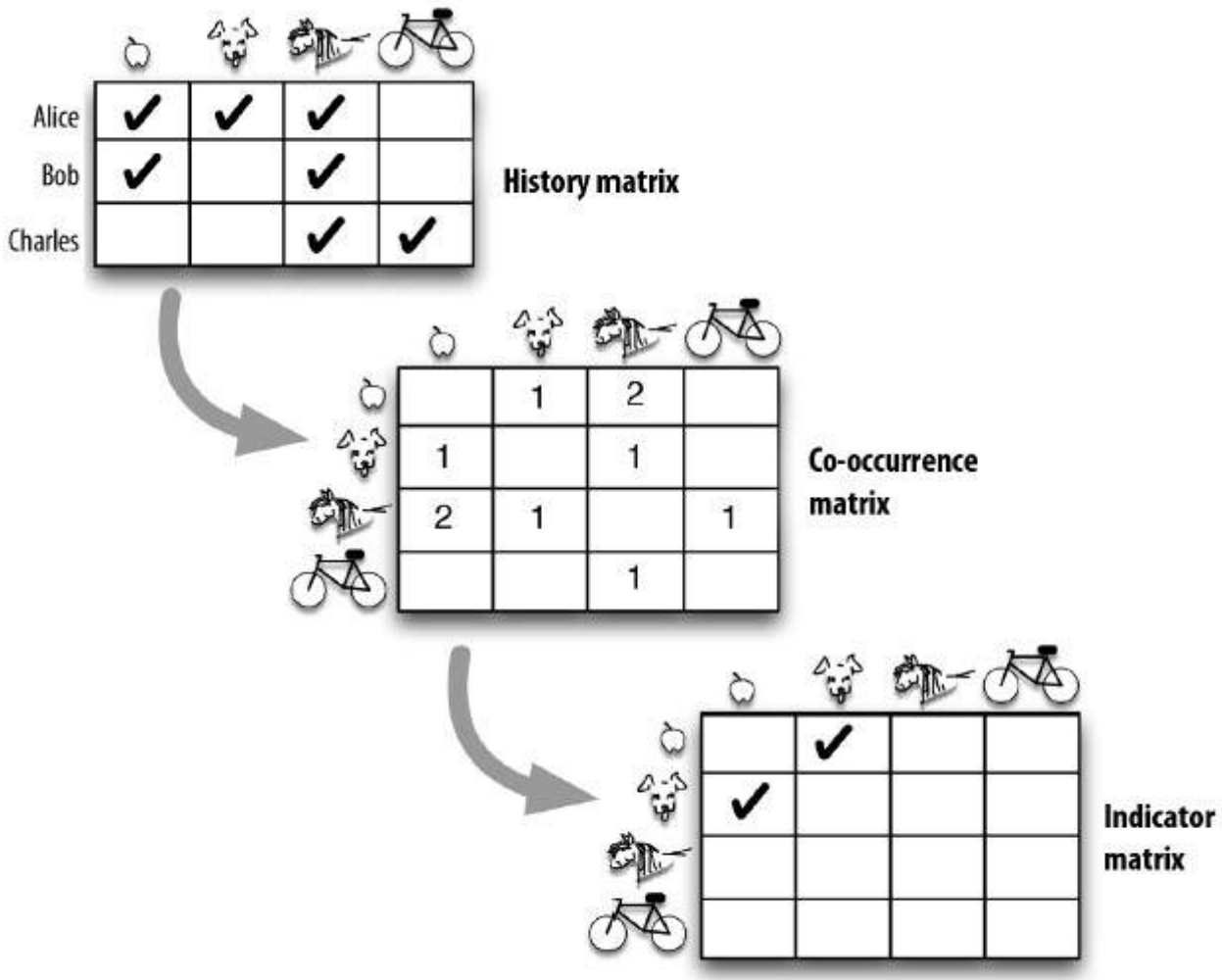
Log Files



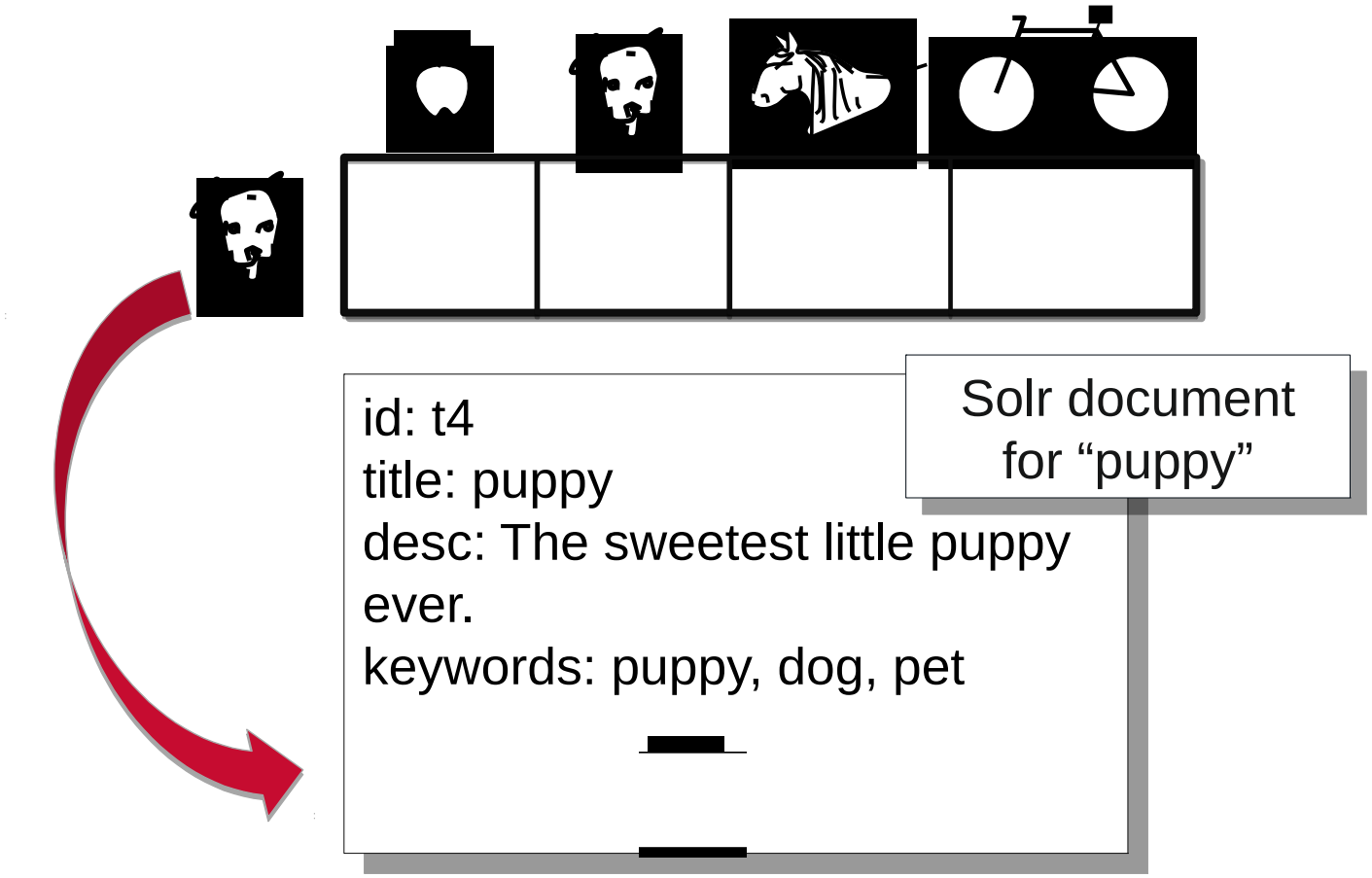
Collection of Documents: Insert Meta-Data



Co-occurrence Analysis



From Indicator Matrix to New Indicator Field



Just add data to an indicator field in search document index.
No need to create a separate index for the indicators.

Lesson 5:

Respect the other team

Homework Assignment

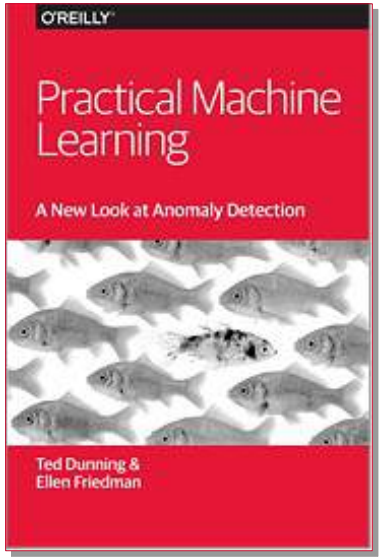
Lessons - Summary

- It’s worth fixing the problem
- Find the essential concepts in what you do
- Distinguish between practical goals & the technical solution
- Respect the other team
- Help them see your own value
- Use appropriate style of communication
- Have a parrot joke ready

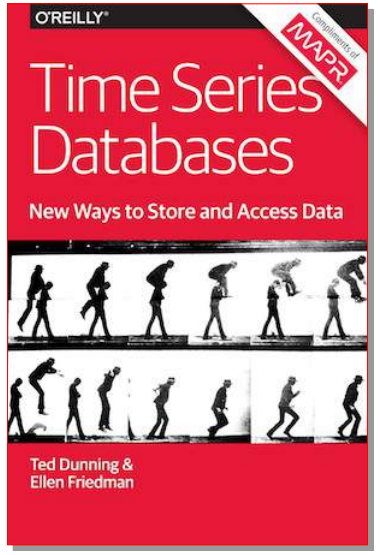
Short Books by Ted Dunning & Ellen Friedman

- Published by O'Reilly in 2014 and 2015
- For sale from Amazon or O'Reilly
- Free e-books currently available courtesy of MapR

http://bit.ly/recommendation-ebook



http://bit.ly/ebook-anomaly



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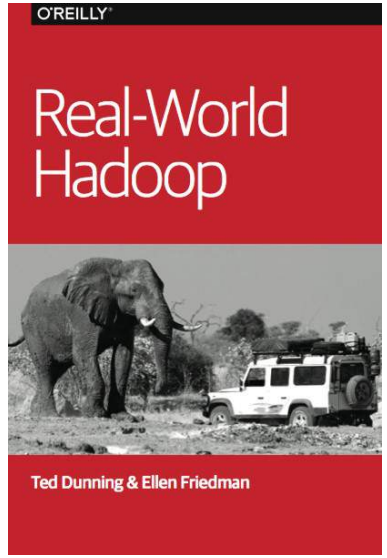

http://bit.ly/ebook-real-world-hadoop

Please support women in tech – help build girls' dreams of what they can accomplish

Thank you!

Contact Information

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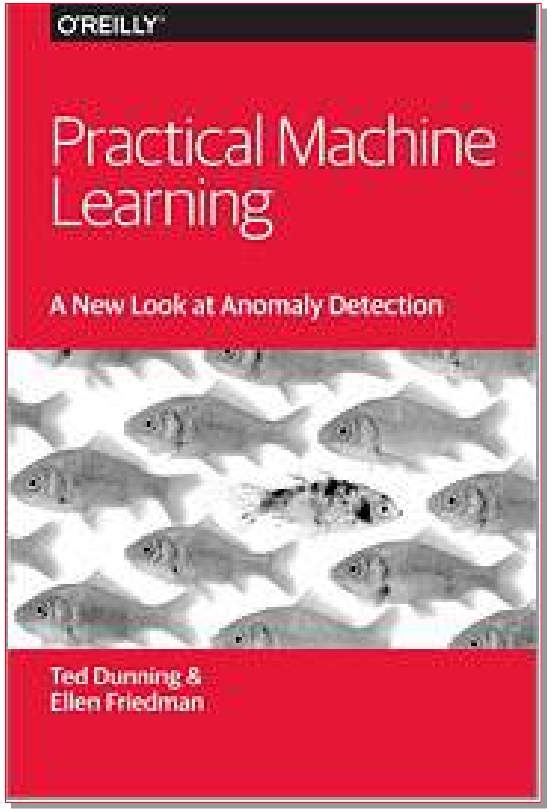
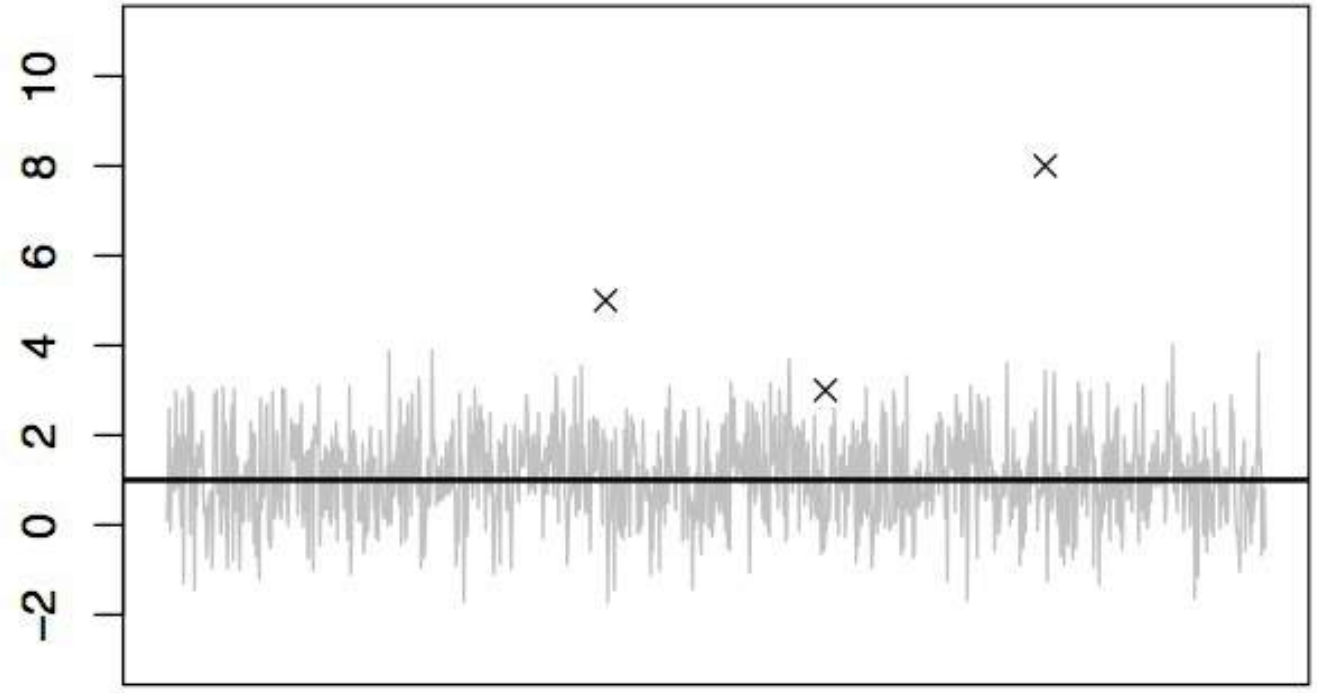
A New Look at Anomaly Detection



- Why adaptive model is important
- 1st discover “normal”, then find anomalies
- Innovation for adaptive threshold for alerts: *t*-digest

Discover instead of define



Make an adaptive model to discover what is normal,
then recognize outliers that show anomalous behavior.