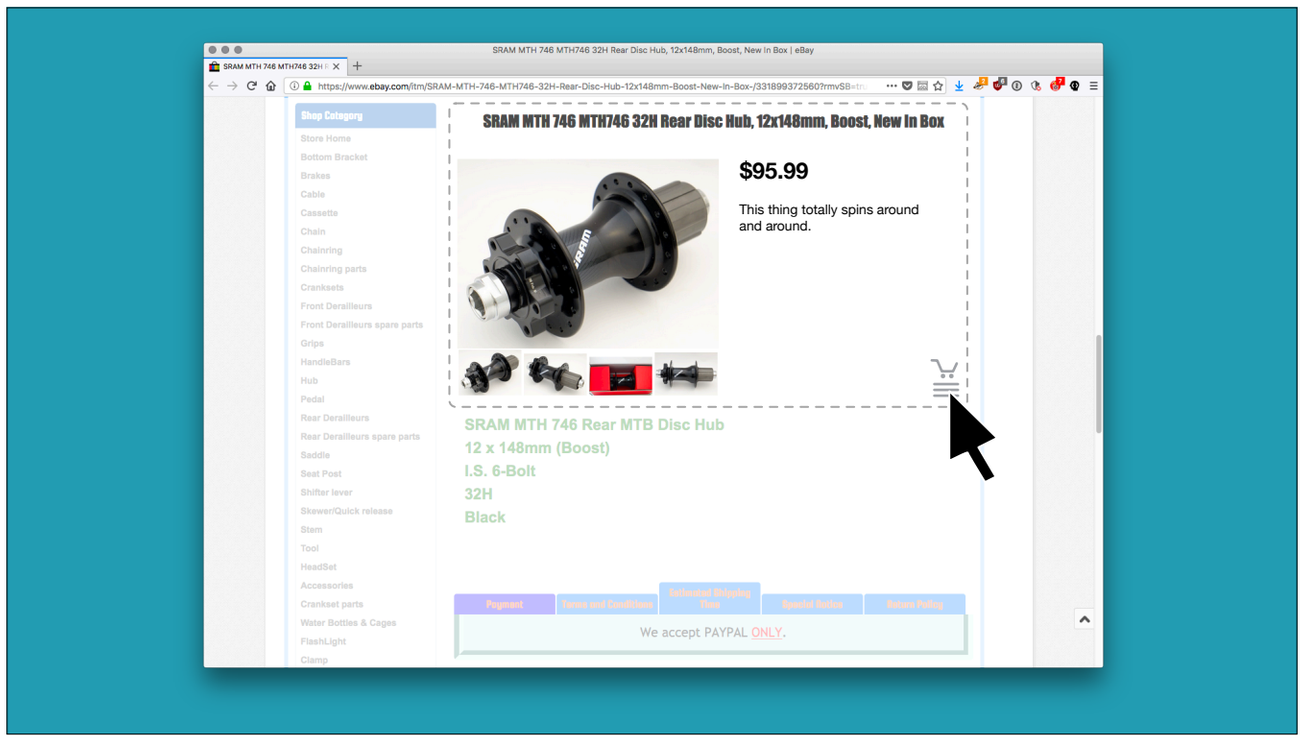

moz://a
all hands 2018
san francisco

About 10 mins.

- browsers
  - **render** well
  - **tabs, bookmarks**
- ~ mere renderer of the **page author's intent**.
  - ~ **PDFs**
  - **user's agent**
  - **next frontier** for that: **viewport**.

- What if
  - **Drag any product**


SRAM MTH 746 MTH746 32H Rear Disc Hub, 12x148mm, Boost, New In Box | eBay
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SRAM MTH 746 MTH746 32H Rear Disc Hub, 12x148mm, Boost, New In Box
$95.99
This thing totally spins around and around.
SRAM MTH 746 Rear MTB Disc Hub
12 x 148mm (Boost)
I.S. 6-Bolt
32H
Black
Payment
Terms and Conditions
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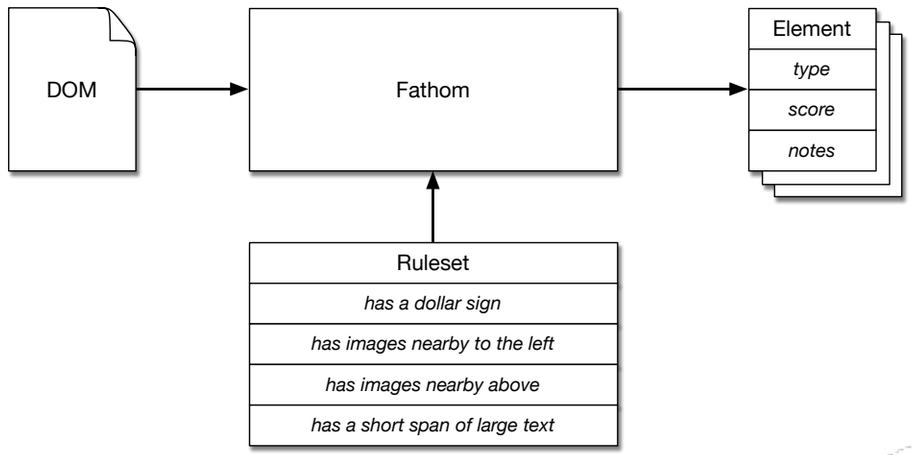
Special Notice
Return Policy
We accept PAYPAL ONLY.

- **pop-ups**

- Hard
  - HTML has not kept up
    - <**product**>
    - <**popup**>
  - If there was, **authors wouldn't use it**
    - ~ **semantic web**
    - ~ **scraped**
- So let's **understand pages the way humans do, with Fathom**
  - JS framework/mini-language that **embraces the mess**
    - like **search engines**
  - so we can bust into the viewport and bend page content to the user's will
- **key insight**: signal left on the table
  - **CSS** classes and IDs
    - It's where the **semantics** have gone.
  - Durable across **human languages** due to **software ecosystem momentum**
  - Another source of semantics: **Spatial positioning** and layering of elements
- Here's how it works
  - Fathom is the **engine**, providing…

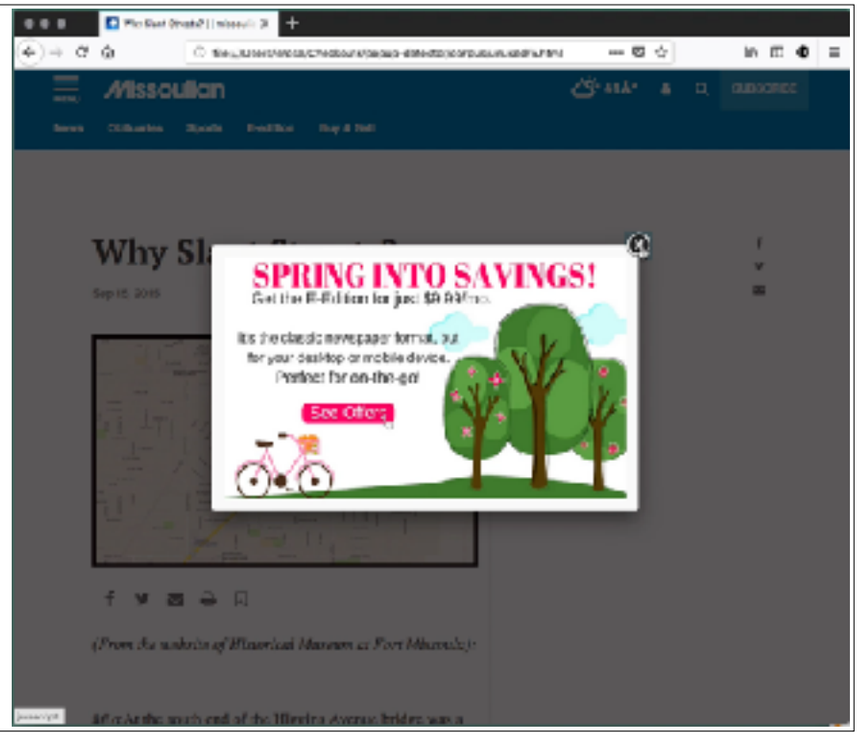
Fathom as Engine



- **data-flow** language
- **categorization** primitives
- **DOM traversal**

- You write **rulesets**, which are the programs it runs.
    - **fuzzy**
    - bags of **characteristics** that, say, products on a page **tend** to have.
    - But you don't have to **get them right**, because
    - After that, you collect maybe 100 **examples**

https://addons.mozilla.org/en-US/firefox/addon/fathomfox/

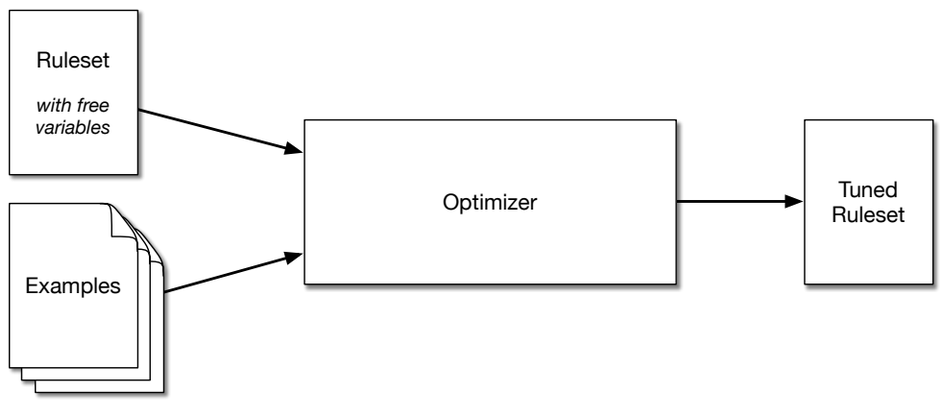


using the **FathomFox** webext

- lets you **label**
- serializes web pages, inlining images, CSS, other resources
- stripping out scripts
    - things are the same every time

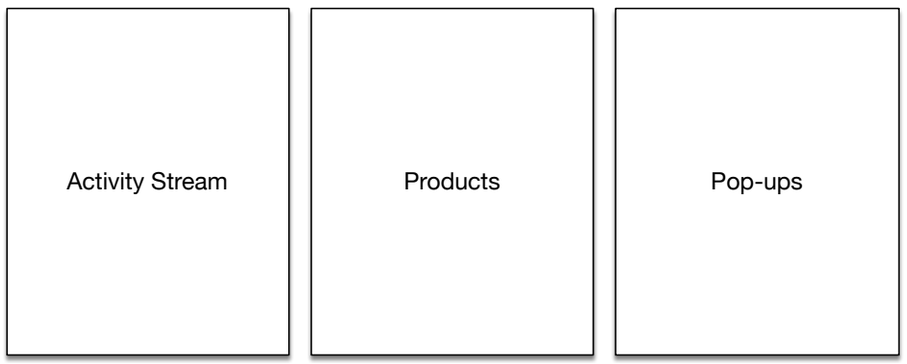
You feed **examples** + your **ruleset** to Fathom's **optimizer**.

Optimizing a Ruleset



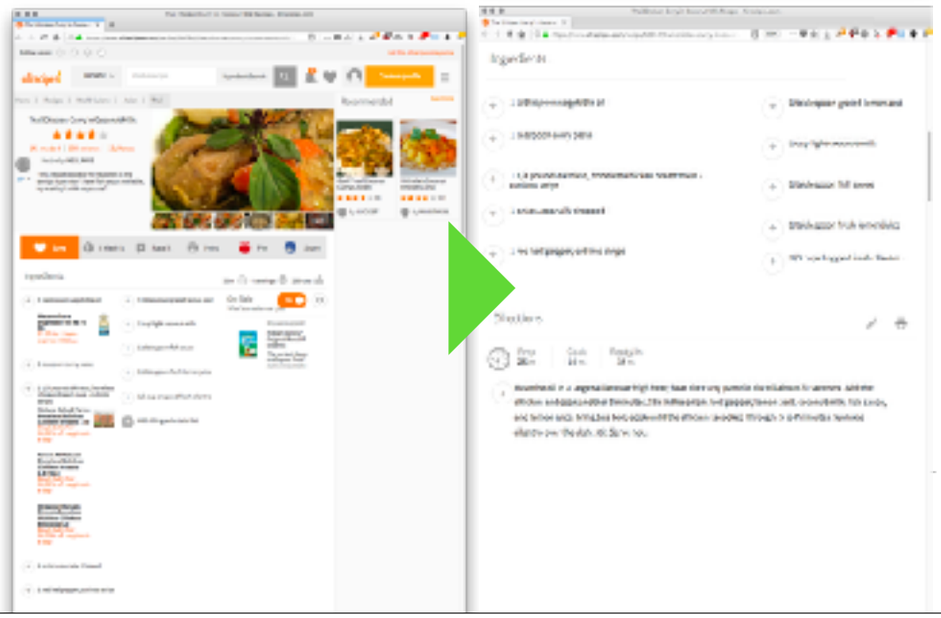
  - Uses **simulated annealing** to come up with **optimal weights** for your rules
  - and **pitches out** ones that don't amount to much.
- At the end, you have a lovely little **encapsulated pearl** that takes in a DOM and labels the entities on it
  - ads
  - slideshows
  - recipes
- And it also tags each with a **confidence**, so you can act accordingly.

Current Uses



- **So far**
    - Powers **Activity Stream**
        - where we replaced a monthly subscription to parsely with 70 lines of code.
    - Wrote PoC **product** recognizer, with 90% accuracy on images, 100% on titles
    - Writing **pop-up recognizer** as we speak
- But I want to see us go **even further**

It's Hard to Scroll with Egg on My Hands



- So many pages are
  - Abusive
  - Ugly
  - Hard to hard to remix
    - **monolithic**. Stuck with **site's own tools**.
    - **Address**→Google Maps. ~ **NASCAR** buttons.
  - Or just inconsistent
    - mystery meat UI
    - hover nav
- Let's use Fathom to make Firefox the browser in which every page
  - **looks beautiful**
  - acts civilized
  - respects the **user's best interest.**

The Future

- Tuning in FF
- Better optimizer math
- Arbitrary predicates
- Optimal decision trees
- OCaml

- I can talk more about
  - **Prolog**-like DSL
  - **Tooling** for example collection

But I also want to know:

- What kind of things are you looking to recognize in pages?
- How would you like to reshape pages?
- How do you wish your experience of the web were different?

I'm here to make that possible.

- privacy of collected study data: just send characteristics
- local rules to add to rulesets: appendability is nice for that