Automatic Discovery of Performance and Energy Pitfalls in HTML and CSS

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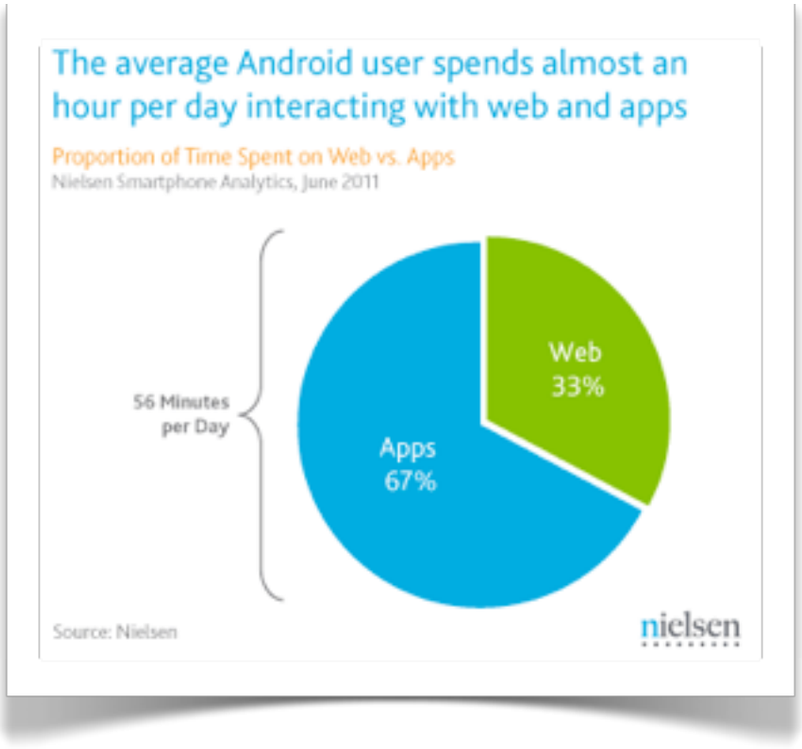
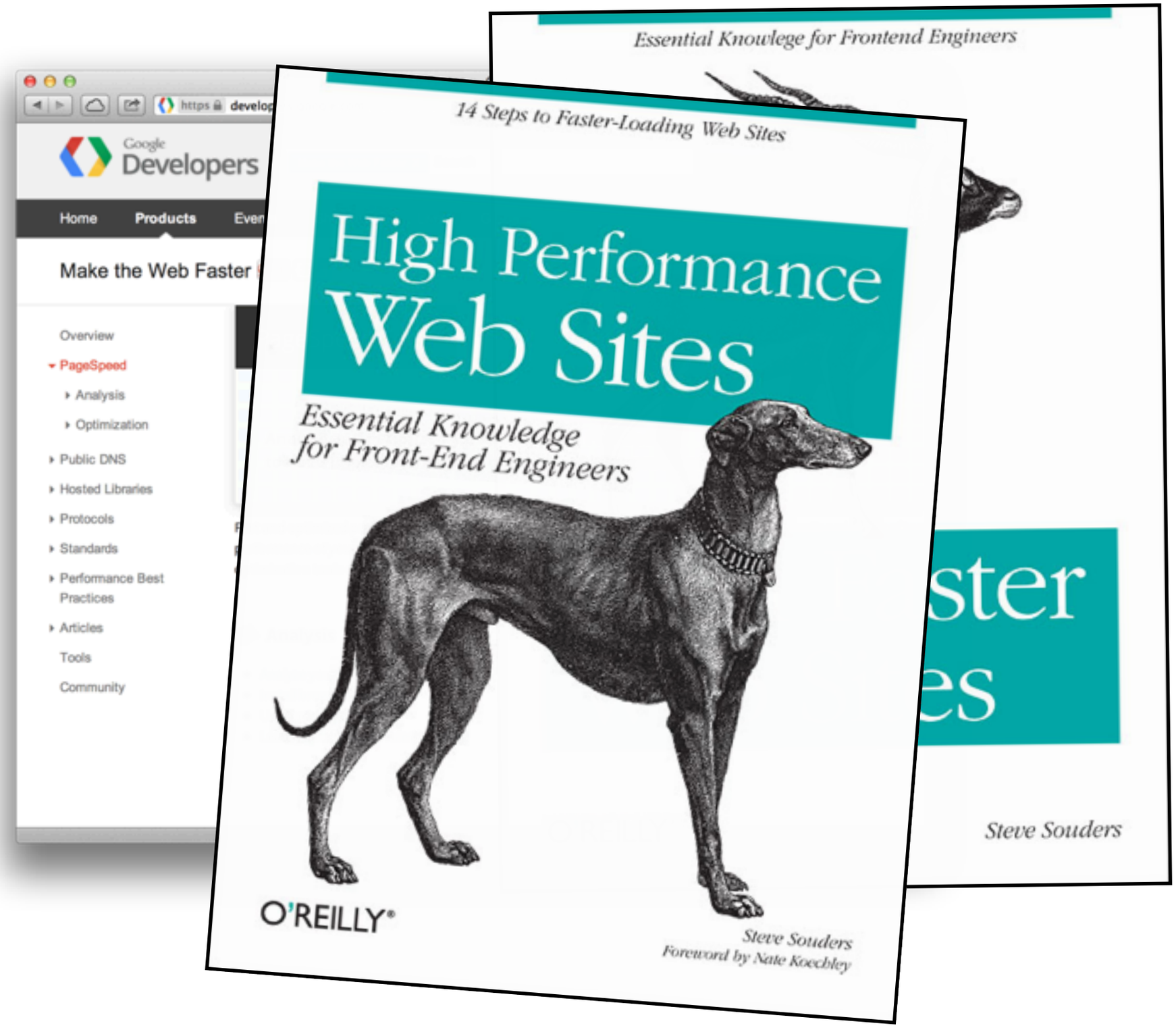
Browser performance and energy efficiency

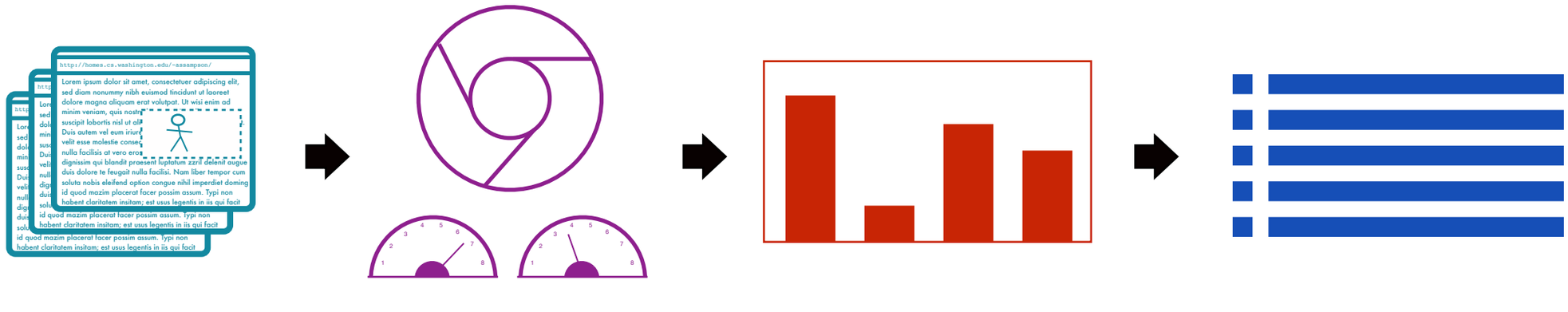
Browsers are ubiquitous on smartphones but still suffer from performance and energy shortfalls.

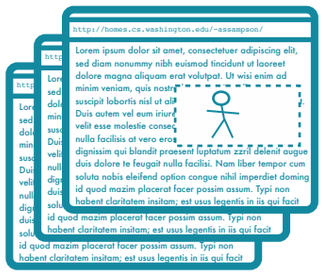


Best practices today

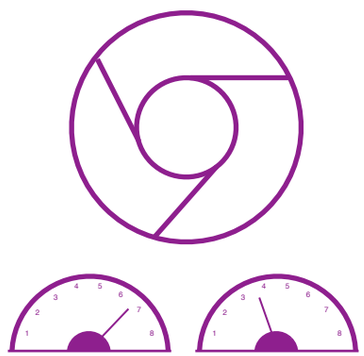


Automatically generating new best practices





Analyze hundreds of popular Web pages to gain insight into **real-world usage**.



Measure **performance and energy** *in vitro* on unmodified browsers.

SMP
AUTONOMOUS

with Google

Assembled in CHINA

FCC ID IHDP56KC1

IC 1090-56KC1

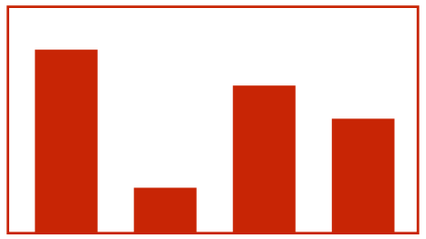
SJUG5548AF

Model: A855

MSN K376NEC4GZ

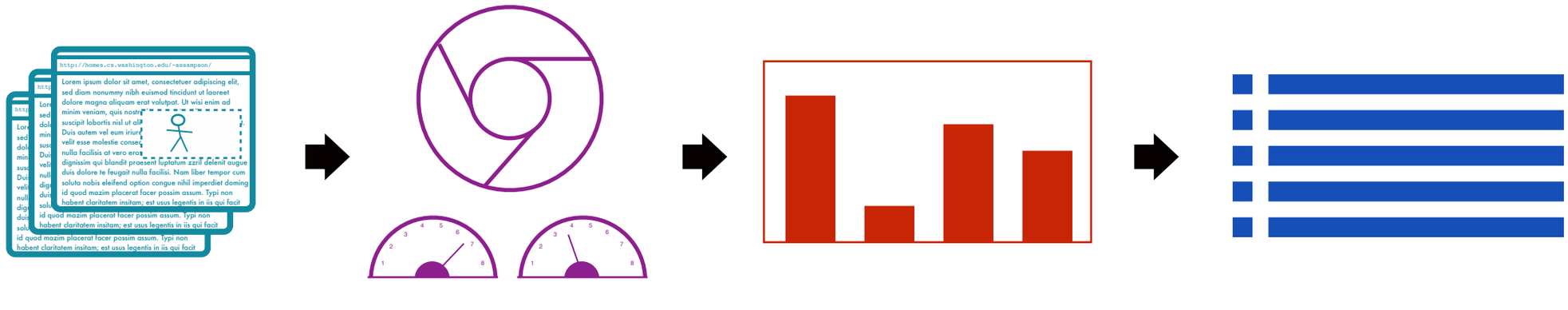
HW A


BK PRECISION® 1696
3.69V
V-const
0.148A
0.546W
OUTPUT
REMOTE
SWITCHING MODE DC REGULATED POWER SUPPLY
1
2
3
UP
4
5
6
0
7
8
9
DN
RS-232/485
PWR
Lock/Unlock
RECALL
SHIFT
CLEAR
V/I/P On/Off
ENTER
JOG
DC OUTPUT
1 - 20V 0 - 10A



Learn a model relating page characteristics to performance and energy.

Generate **hypotheses** about what makes pages slow and energy-intensive.


http://homes.cs.washington.edu/~assampson/
Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue duis dolore te feugait nulla facilisi. Nam liber tempor cum soluta nobis eleifend option congue nihil imperdiet doming id quod mazim placerat facer possim assum. Typi non habent claritatem insitam; est usus legentis in iis qui facit
Web Pages
WebChar Analysis
Performance and Energy Model
Hypotheses

Code and data available for download:

http://bit.ly/WebChar