W10
Test Analytics, AI/ ML
Wednesday, May 2nd, 2018
1:45 PM

Machine Learning Heralds the End of Selenium

Presented by:

Jason Arbon

Appdiff, Inc.

Brought to you by:

350 Corporate Way, Suite 400, Orange Park, FL 32073
888-268-8770 ∙ 904-278-0524 - info@techwell.com - http://www.stareast.techwell.com/

Jason Arbon

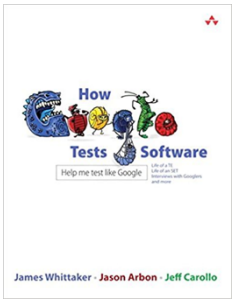
Appdiff, Inc.

Jason Arbon is the CEO of Appdiff, which is redefining how enterprises develop, test, and ship mobile apps with zero code and zero setup required. He was formerly the director of engineering and product at Applause.com/uTest.com, where he led product strategy to deliver crowdsourced testing via more than 250,000 community members and created the app store data analytics service. Jason previously held engineering leadership roles at Google and Microsoft and coauthored How Google Tests Software and App Quality: Secrets for Agile App Teams.

Machine Learning Heralds the End of Selenium

Jason Arbon

test.ai



Google

Microsoft

uTest®

STAR EAST A TECHWELL EVENT #STAREAST #AI @jarbon @testdotai

test.ai

so 2004

test.ai

4 Big Problems with Selenium / Appium

test.ai

1

You Have To Code

test.ai

2

Element Selection

test.ai

3

Hard-Coded Step Sequencing

test.ai

4

Little Reuse

test.ai

Google Testing Blog

My Selenium Tests Aren't Stable!

Tuesday, June 02, 2009

By Simon Stewart

It's a complaint that I've heard too many times to ignore: "My Selenium tests are unstable!" The tests are flaky. Sometimes they work, sometimes they don't. How deeply, deeply frustrating! After the tests have been like this for a while, people start to ignore them, meaning all the hard work and potential value that they could offer a team in catching bugs and regressions is lost. It's a shameful waste, but it doesn't have to be.

Automation breaks just when you need it.

Why AI?

People can deal with change and the unexpected.

test.ai

Test code can't.

test.ai

How does AI fix all this?

test.ai

AI works like People

test.ai

1

You Have To Code

test.ai

Approach #1

Use Machine Learning to smartly update/repair Selectors when they break.

Approach #2

Use Machine Learning directly instead of Selectors.

STAR EAST A TECHWELL EVENT #STAREAST #AI @jarbon @testdotai

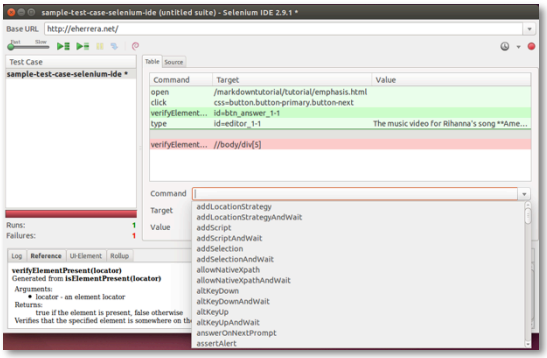
test.ai

Approach #1

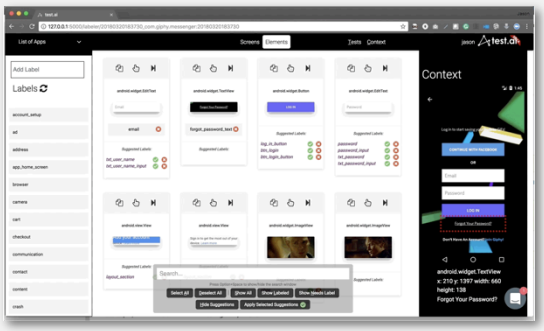
Old / Past

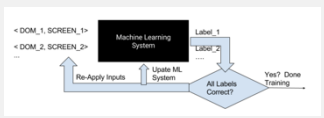
Element Identification

test.ai



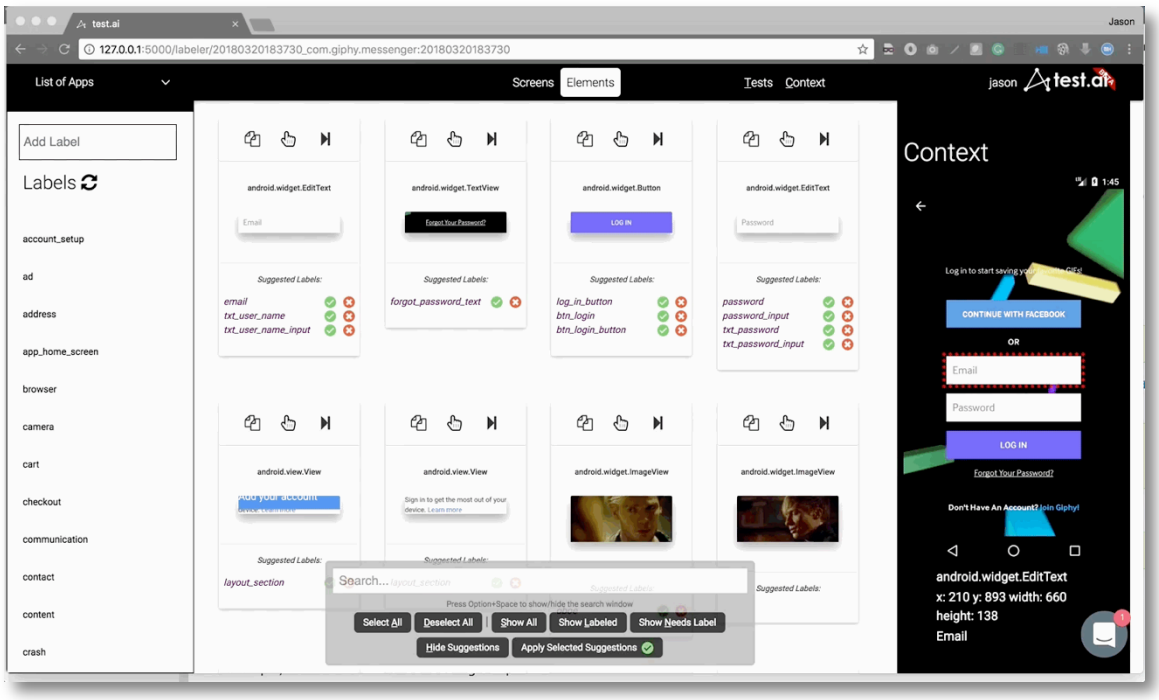
VS





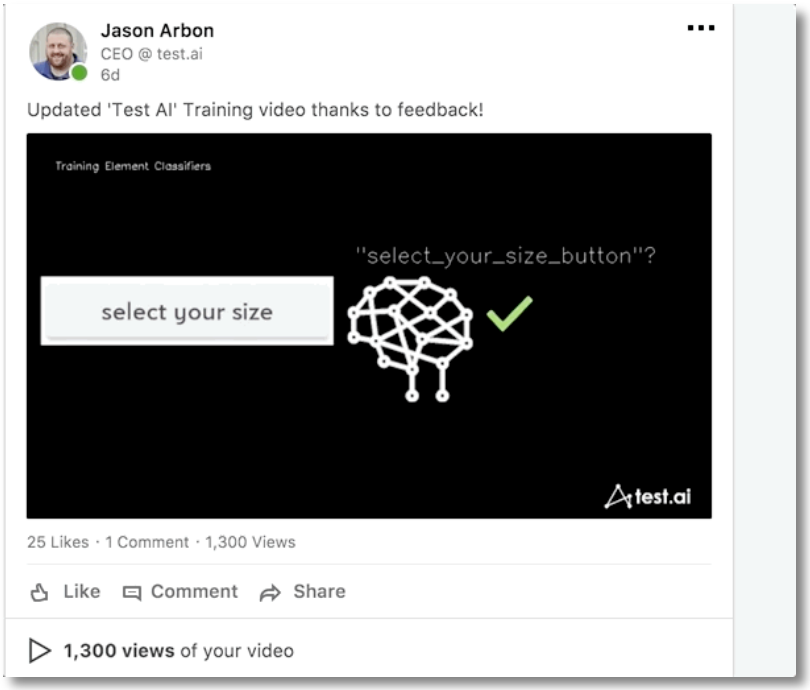
Selenium IDE
Pain Finding Identifiers
Have to write code (brittle)

Test.ai
Auto Labeled
Quick Visual Custom Labeling



2

Element Selection



STAR EAST
A TECHWELL EVENT

test.ai

STAR EAST
A TECHWELL EVENT

test.ai

3

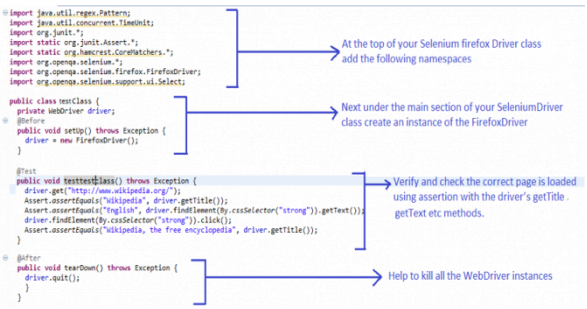
Hard-Coded Step Sequencing

test.ai

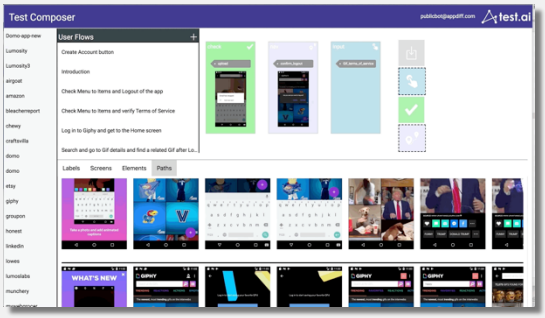
Old / Past

Step Sequencing

test.ai



VS

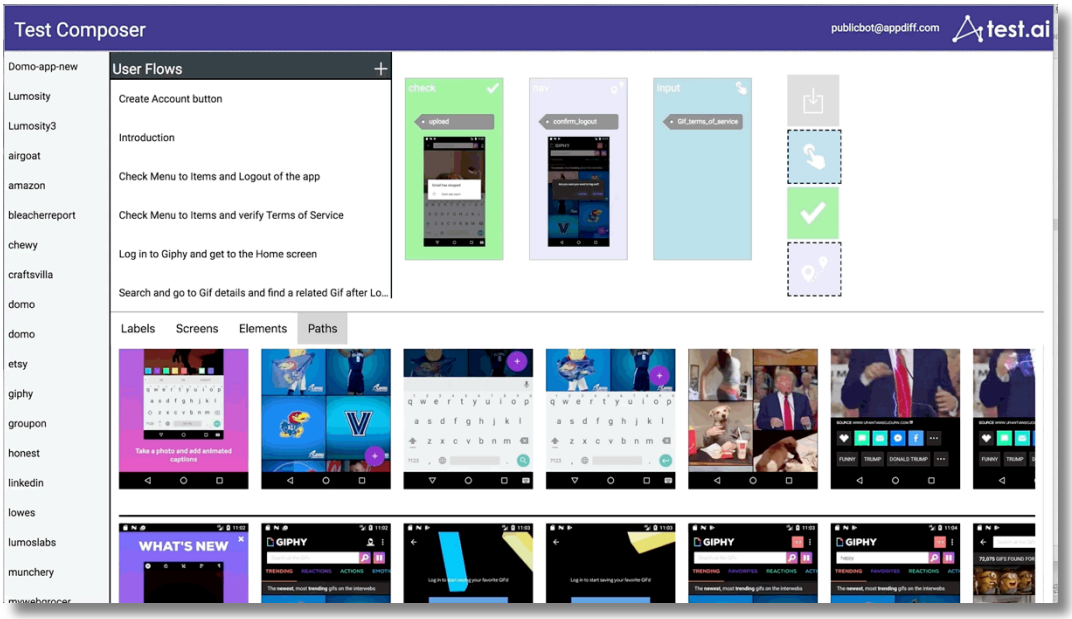


Selenium IDE
Have to code exact steps.
Brittle when app changes.

Test.ai
Familiar Cucumber/Gherkin
Only list labels of interesting steps and verifications.
Also, GUI Editor

STAR EAST A TECHWELL EVENT #STAREAST #AI @jarbon @testdotai

test.ai

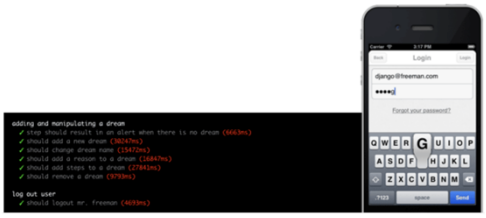


test.ai

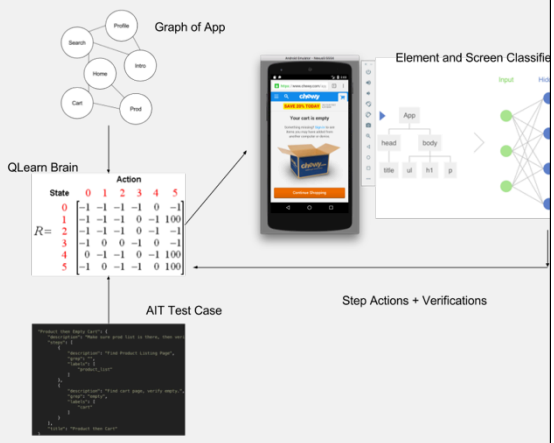
Old / Past

Test Execution

test.ai



VS



test.ai

4

Little Reuse

test.ai

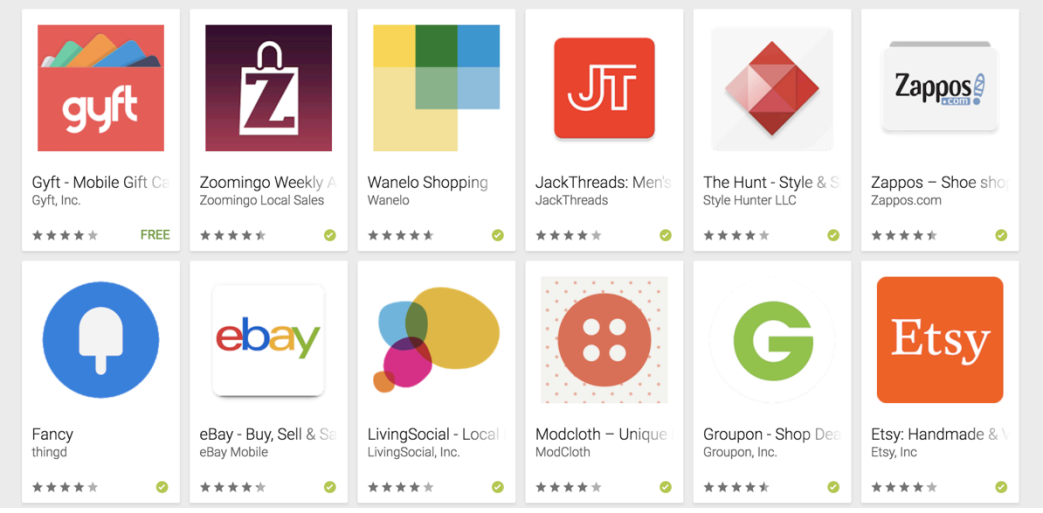
AIT - Open - Manual Too

```
# Demo AIT Test Definition
Test Name: Remove Beanie Baby from item from cart
  Description: Make sure we can remove an item from the shopping cart.
  Tags: cart, remove
  Step: Search for Beanie Baby
    Context: SCREENNAME “Search”
    Input: ACTION SEARCH “Beanie Babies”
  Step: Add Item
  #Step: Add Item Any item will do.
    Context: SCREENNAME “Product” and HASWORD “Beanie Baby”
    Input: ACTION ADDTOCART
  Step: Remove Item
    Context: Cart and HASWORD “Beanie Baby”
    Input: Remove Item
  Step: Verify Item Removed
    Context: SCREENNAME Cart and NOTHASWORD “Beanie Baby”
```


test.ai

Write Once, Run Cross Platform

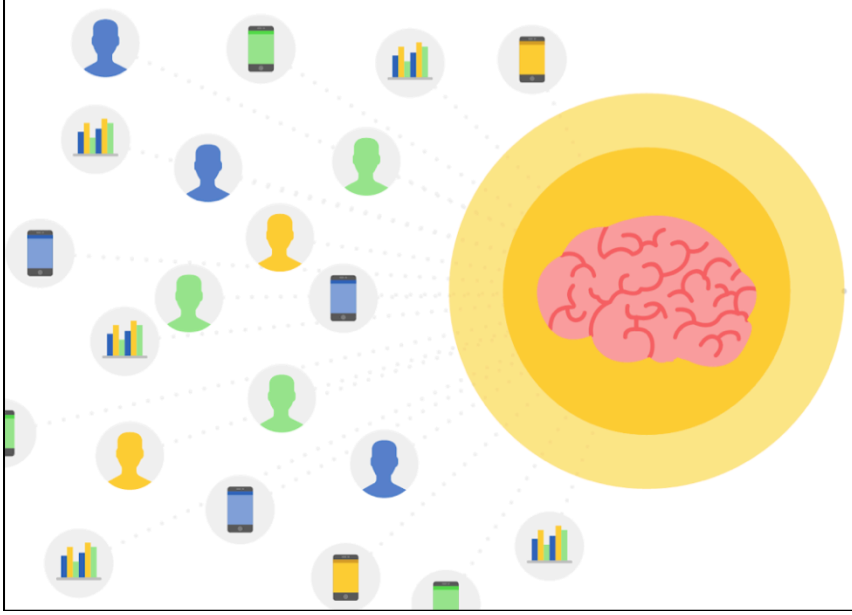
Game-Changer: Write Once, Run on All Similar Apps



Many Companies Working on AI for Testing

test.ai

Harnessing Collective Intelligence For Testing



test.ai

Leverage AI

mabl

applitools

functionize

test.ai

Eggplant AI

testim

The brain of the Digital Automation Intelligence Suite, Eggplant AI achieves intelligent test automation powered by AI, machine learning, and analytics. Advanced bug-hunting algorithms predict

test.ai

Approach #1

functionize

Record and auto

testim

repair selectors

Approach #2

Visual Differencing Cross Platform

applitools

STAR EAST A TECHWELL EVENT #STAREAST #AI @jarbon @testdotai

Approach #3

mabl

Record and look for

test.ai

Anomalies

Approach #4

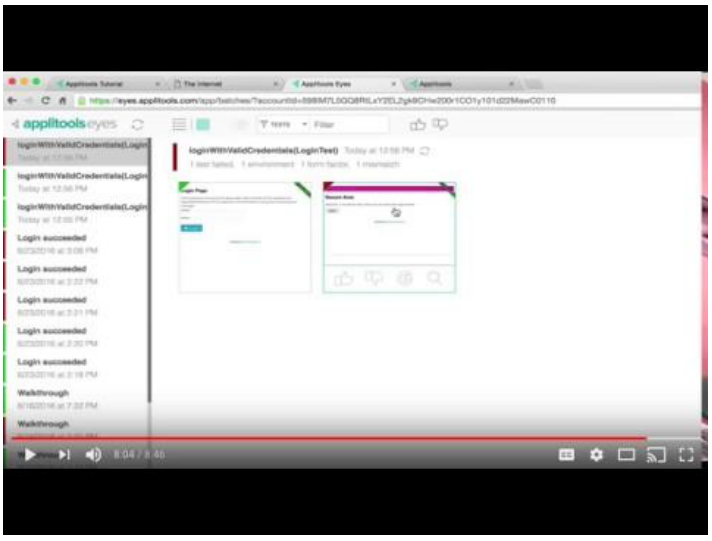
Drag and Drop test

test.ai

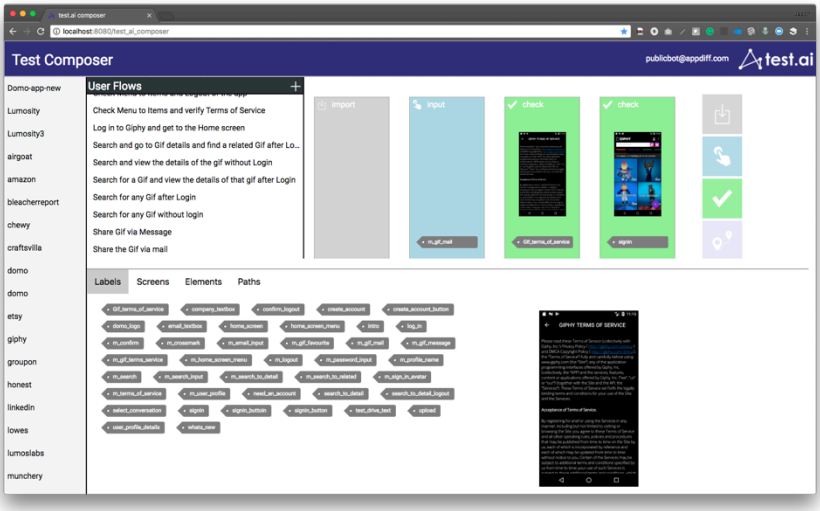
creation. AI executes tests like a human.

Approach #1

Approach #2



Approach #3



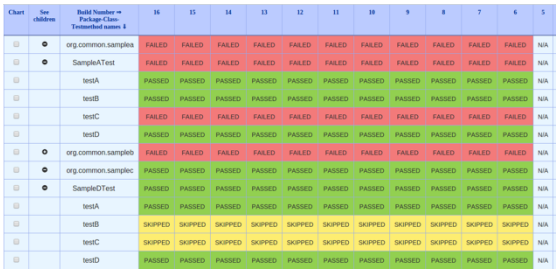
Approach #4

Approach #4

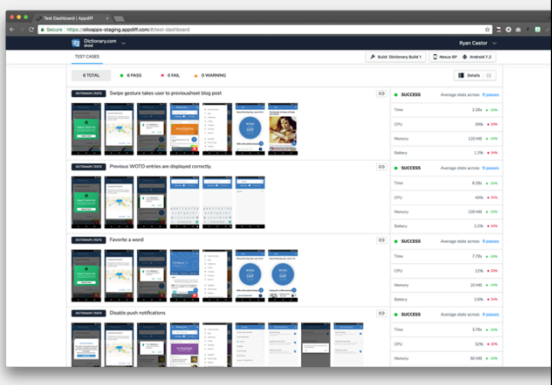
Old / Past

Test Reporting

test.ai

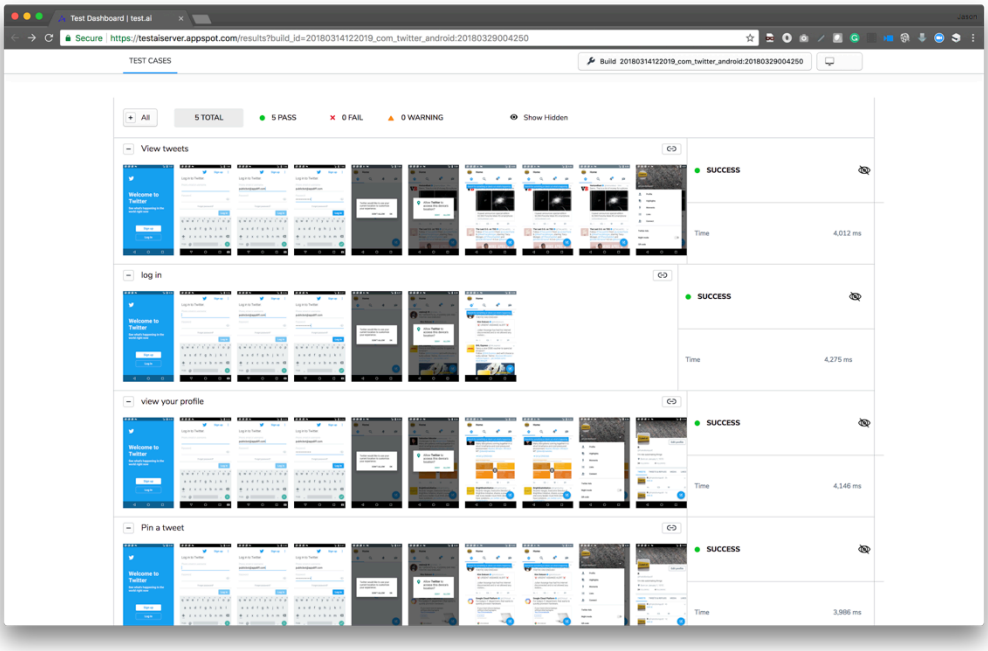


VS

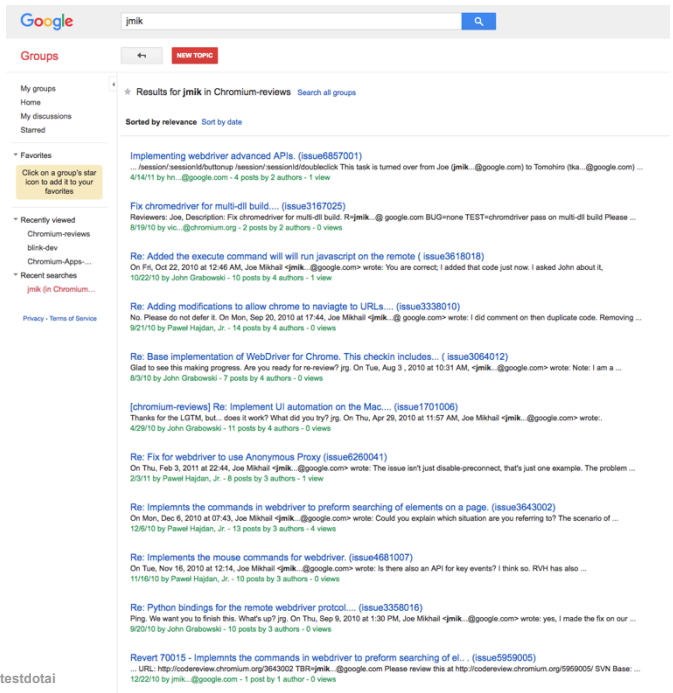


Selenium IDE
Many tests flaky/break as app changes
Simple pass/fail

Test.ai
Q-Learning test step generation
Element Classifiers at runtime
See test steps
Presentable



test.ai



test.ai

jason@test.ai

@jarbon