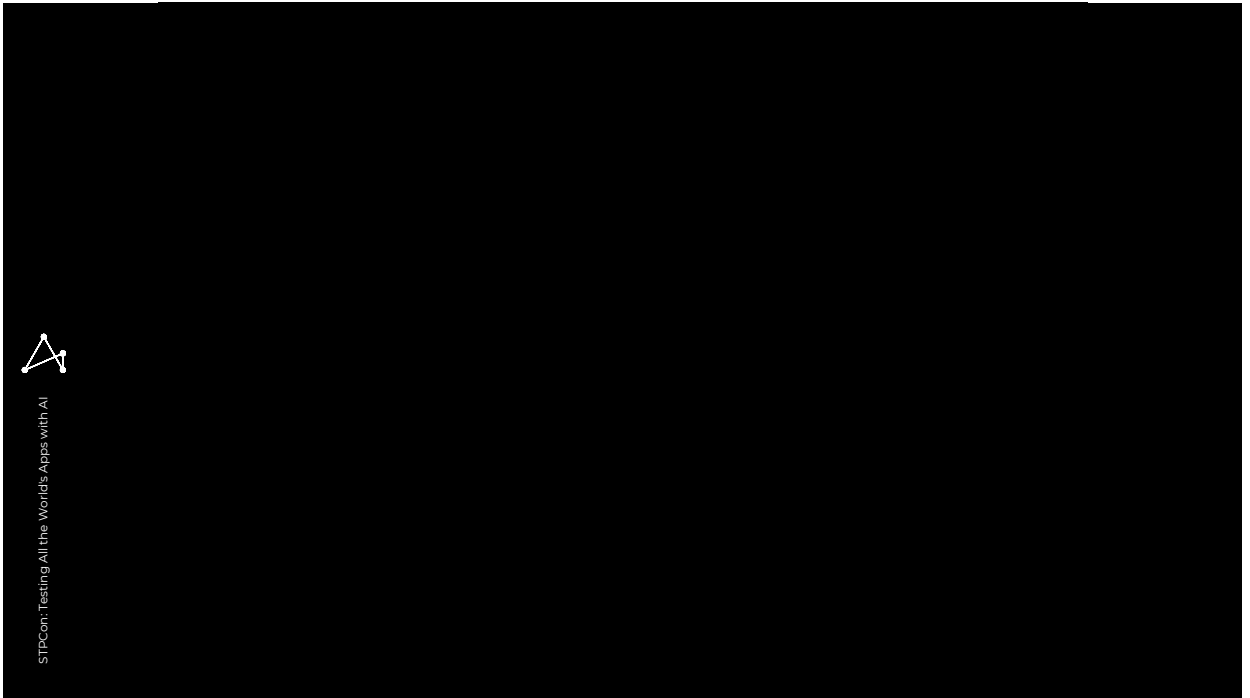




1



2



STPCon: Testing AI-Based Systems

3




STPCon: Testing All the World's Apps with AI




4



5



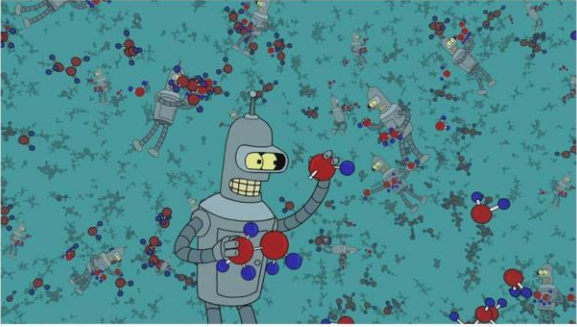


Login

## Test.ai nabs \$11M Series A led by Google to put bots to work testing apps

Lucas Matney @lucasmtnry / 7 months ago Comment

- Startups
- Apps
- Gadgets
- Videos
- Podcasts
- Extra Crunch
- 
- Events
- Advertise
- Crunchbase
- More



For developers, the process of determining whether every new update is going to botch some core functionality can take up a lot of time and resources, and things get far more complicated when you're managing a multitude of apps.

[Cybersecurity 101](#)  
[Fintech](#)  
[Transportation](#)  
[Google](#)



6

See  
 Intent  
 Judge  
 Reuse  
 Scale  
 Feedback

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**BBC News**

TEST REPORTS

In the retail news category, BBC News was shorter and more optimal in 6 test flows, than others tested. In 3 test flows were found to be longer than others.

Video Signin Trending LIVE TV Signin Video Notifications Ads Video All

**Trending** BBC's Trending Flow is **10x** Faster Than The Average News Mobile App Full Test Report

PERFORMANCE METRICS

Pages	06	Count	14.23	Time	12.3s	Score	6.53	Load Time	0.11s
-------	----	-------	-------	------	-------	-------	------	-----------	-------

THIS SCREEN AVERAGE

News Notifications Accessibility

Bye-bye - Trump exits shutdown talks

Bye-bye - Trump exits shutdown talks

News Notifications Accessibility

Bye-bye - Trump exits shutdown talks

Bye-bye - Trump exits shutdown talks

7

# WE WANT YOUR FEEDBACK



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8



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See  
Intent  
Judge  
Reuse  
Scale  
Feedback

9

Labels Logos Web Document Properties Safe Search

Facebook

Facebook 12 + Facebook , Inc .

# 2 in Social Networking \* \* \* \* 3 .  
1 , 269 . 1K Ratings

Free . Offers In - App Purchases

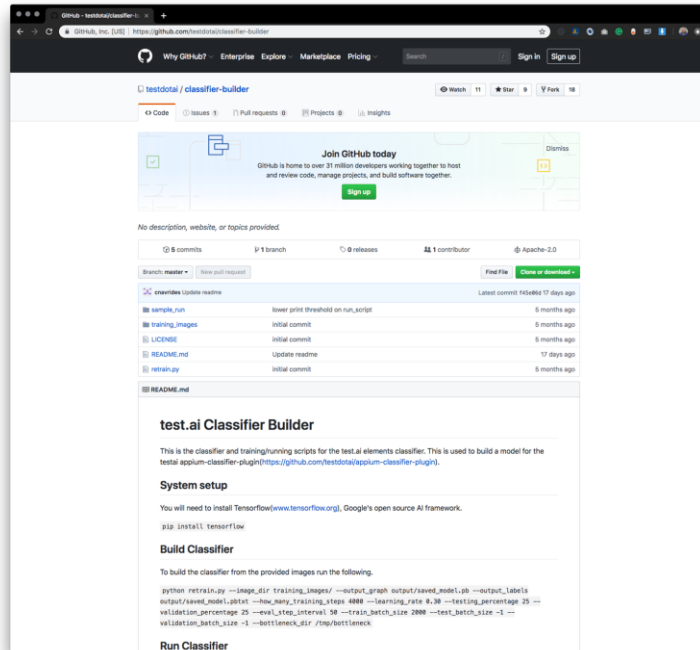
Screenshots

facebook\_app.png



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10



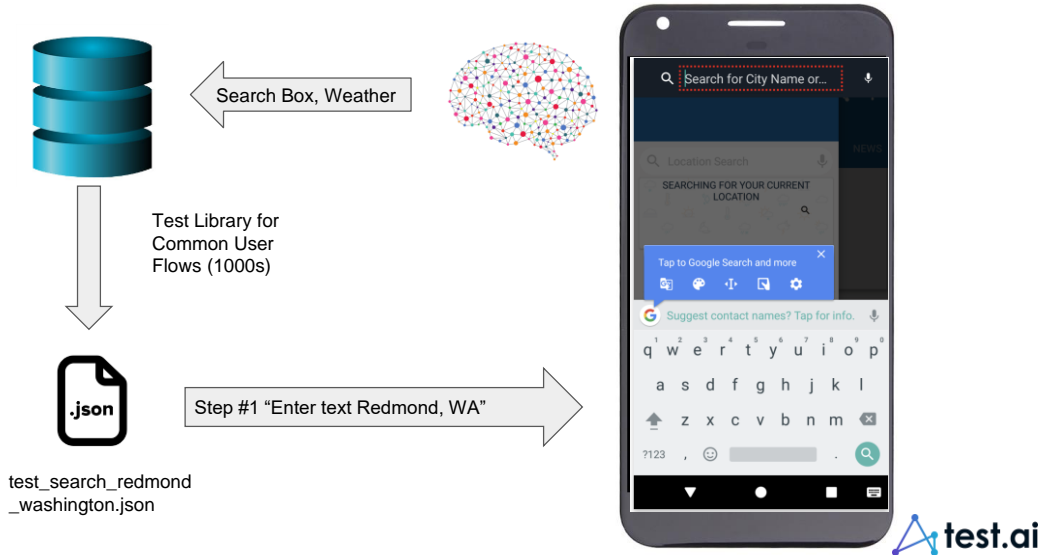
11



See  
 Intent  
 Judge  
 Reuse  
 Scale  
 Feedback

12

# Automated Exploratory



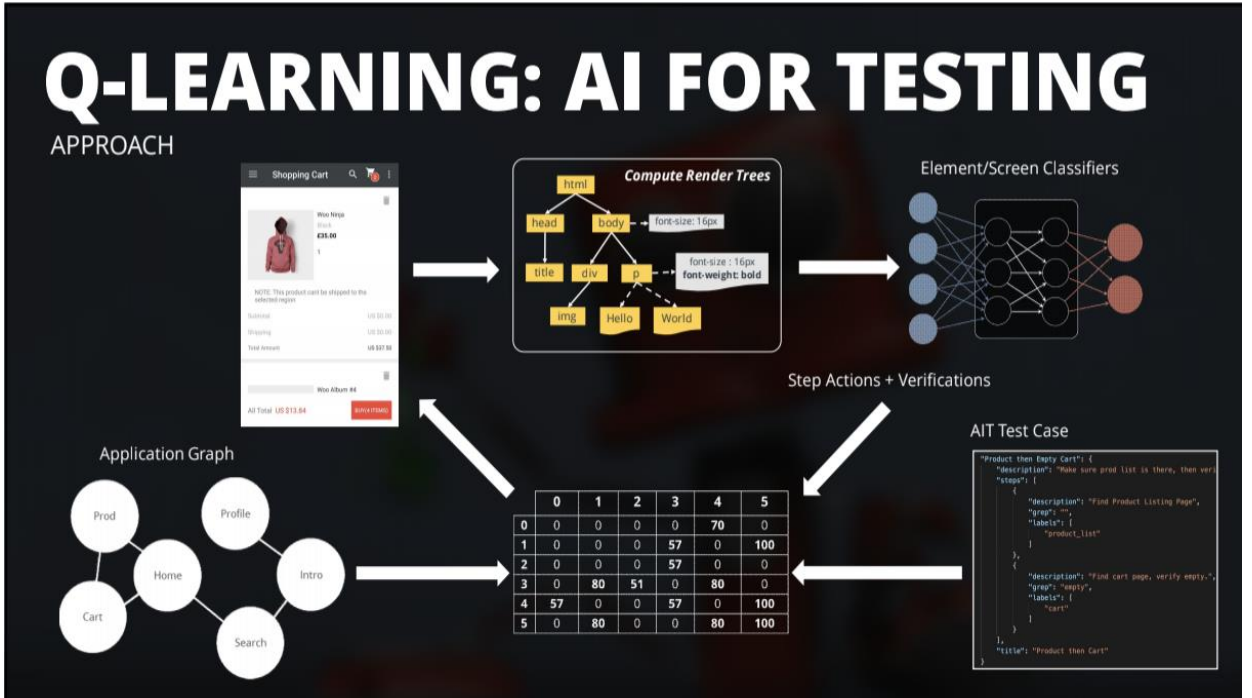
STPCon: Testing All the Worlds Apps with AI

```

{
  "description": "Search app search for gradient",
  "is_deactivated": false,
  "steps": [
    {
      "description": "Get to search",
      "type": "navigation",
      "labels": [
        "search_button"
      ]
    },
    {
      "description": "Click search button",
      "type": "action",
      "input": "tap",
      "labels": [
        "search_button"
      ]
    },
    {
      "description": "Search for gradient",
      "type": "action",
      "input": "text_entry",
      "input_string": "gradient ventures",
      "labels": [
        "search_box"
      ]
    }
  ],
  "tags": [
    "search apps"
  ],
  "title": "Search for gradient"
}
    
```



STPCon: Testing All the Worlds Apps with AI



15

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Cluster	App	App Package Name	App Name	App Version	App Category
1	SportsScoresDroid	com.sportscores	SportsScores	1.0.0	Sports
2	SportsScoresDroid	com.microsoft.appcenter.sports	Microsoft Sports	1.0.0	Sports
3	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
4	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
5	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
6	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
7	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
8	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
9	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
10	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
11	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
12	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
13	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
14	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
15	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
16	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
17	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
18	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
19	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
20	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
21	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
22	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
23	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
24	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
25	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
26	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
27	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
28	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
29	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
30	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
31	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
32	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
33	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
34	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
35	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
36	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
37	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
38	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports
39	SportsScoresDroid	com.banternetworks.mobile.android.gameday	banternetworks	1.0.0	Sports
40	SportsScoresDroid	com.ahio.mobile.client.android.sportacular	ahio.sportacular	1.0.0	Sports

16





StandardTestsPerCluster - Docs

https://docs.google.com/spreadsheets/d/1mrv16uzybydRkLJCwmET-ZrJ5gfo9kX1cl.guOR-4/edit#gid=1501470255

StandardTestsPerCluster

Last edit was made on February 26 by Jason Arbon

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Name	Label(s)		value	Label(s)	action	value	Label(s)	action	value	Label(s)	action	value	Label(s)	action
2	See live scores	live_scores	navigate												
3	See score for a team	team_score	navigate												
4	See live game	live_game	navigate												
5	Listen to live game	live_audio	navigate												
6	Find games near me	schedule	navigate												
7	See league standings	league_standings	navigate												
8	See conference standings	conference_standings	navigate												
9	See division standings	division_standings	navigate												
10	Search for a player, and view their stats	search_input	text	<sports_player>	search_button	tap		search_results	verification	search_result	tap		player_stats	verification	
11	Search for a player, and view their info	search_input	text	<sports_player>	search_button	tap		search_results	verification	search_result	tap		player_info	verification	
12	Search for a team, and view their stats	search_input	text	<sports_team>	search_button	tap		search_results	verification	search_result	tap		team_stats	verification	
13	Search for a team, and view their schedule	search_input	text	<sports_team>	search_button	tap		search_results	verification	search_result	tap		team_schedule	verification	
14	Search for a venue, and view the venue schedule	search_input	text	<sports_venue>	search_button	tap		search_results	verification	search_result	tap		team_roster	verification	
15	Search for a team, and view their roster	search_input	text	<sports_team>	search_button	tap		search_results	verification	search_result	tap		team_schedule	verification	
16	See what is trending	trending	navigate												
17	See my favorites scores, stats, and schedule	my_favorites	navigate												
18	See game highlights	highlights	navigate												
19	See sports news	news	navigate												
20	View game video	video	navigate												
21															
22															
23															
24															
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38															
39															
40															

Clusters - Clusters\_Stats - Unsupported Apps - BusinessNews - Sports Scores\_flows - Video\_flows - News - FacebookApps - PoliceScanner - Tec - Explore

17



See  
 Intent  
 Judge  
 Reuse  
 Scale  
 Feedback

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# How would you determine if a mobile app login was trustworthy just by looking at it?

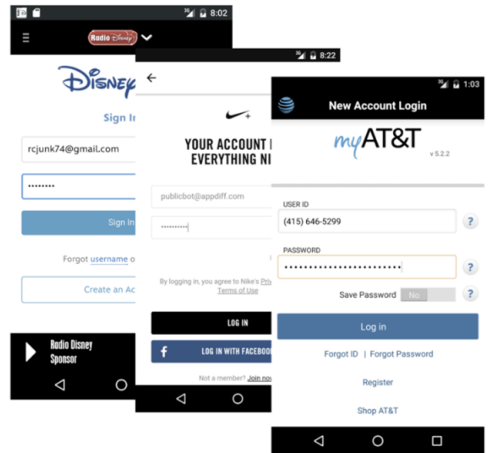
19



## Sample of least trusted apps



## Sample of most trusted apps



ernal Use Only

Samples of Untrustworthy and Trustworthy Login Pages

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See  
Intent  
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Scale  
Feedback

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Test Name: Search for Gradient  
 Description: Perform a simple, single word, web search for the term "Gradient"  
 Tags: "Single\_Word", "Search"

Step: Get To Search  
 StepType: Navigation  
 Labels: "Search Button"

Step: Enter Search Text  
 StepType: TextInput  
 Text: "Gradient"  
 Labels: "Search Box"

Step: Execute Search  
 StepType: Action  
 Action: Tap  
 Labels: "Search Button"

Step: Verify Result Appears  
 StepType: Verify  
 VerificationString: "Gradient"  
 Match: 3  
 Labels: "Search Result"


22

The screenshot shows the Test Studio interface for a test case titled "Search for gradient". The interface includes a header with "LABEL STATS", "Labels", "App", and "Tests". Below the header, the test case details are displayed, including the package name "com.duckduckgo.mobile.android" and the test ID "20180527124429\_com.duckduckgo\_mobile\_android.20180529150947". The test steps are listed as follows:

- Step: Get To Search (StepType: Navigation, Labels: "Search Button")
- Step: Enter Search Text (StepType: TextInput, Text: "Gradient", Labels: "Search Box")
- Step: Execute Search (StepType: Action, Action: Tap, Labels: "Search Button")
- Step: Verify Result Appears (StepType: Verify, VerificationString: "Gradient", Match: 3, Labels: "Search Result")

The screenshots show the app's search interface and the search results for the term "Gradient".

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See  
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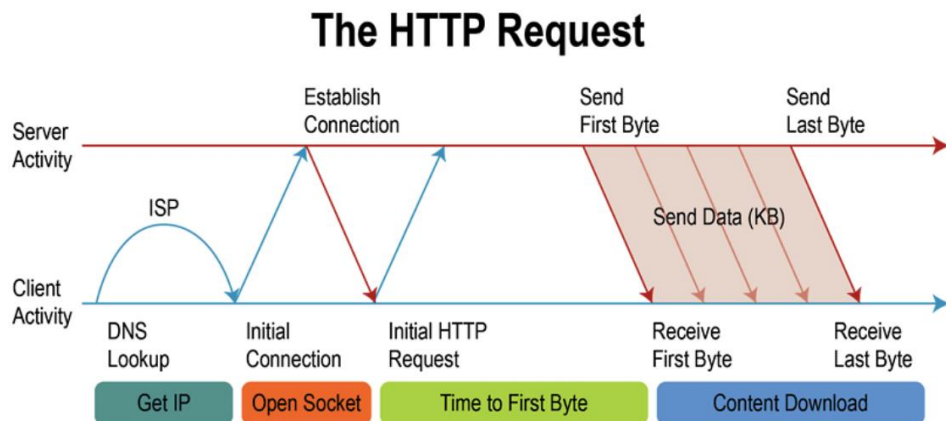
24

# Best and Worst Thing in Test Automation

```
driver = webdriver.Remote(
    command_executor='http://YOUR_USERNAME
:YOUR_ACCESS_KEY@ondemand.remotelab.co
m:80/wd/hub',
    desired_capabilities=desired_cap)
```

25

Each step ->RPC over the Internet???



<http://www.websiteoptimization.com/secrets/metrics/10-21-http-request.png>

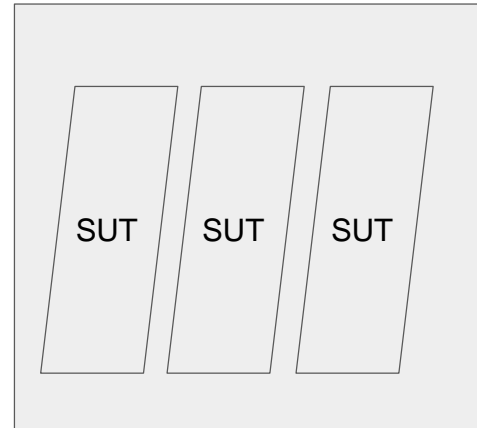
26

## Bad, shared hosting

Shared CPU / Mem /  
Storage / Network

Unpredictable And Variable  
timing of I/O and behavior

..but cheaper!



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## KISS Solution: 1:1:1

One Machine with

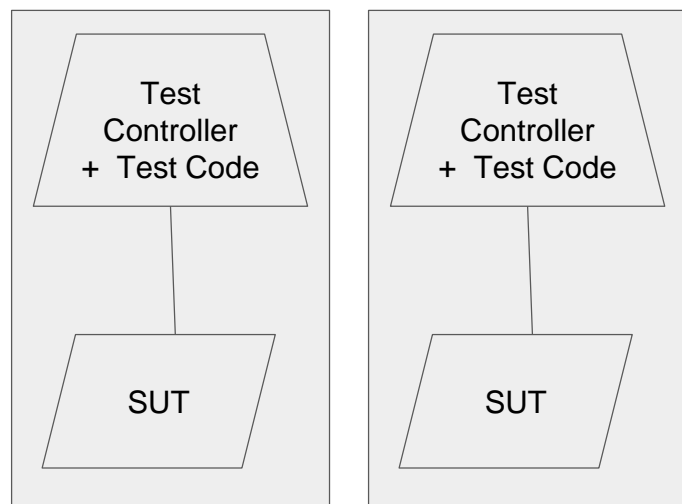
- One Test Controller with Local Test Code
- One SUT

“Local” RPCs

Isolated Controllers

Isolated SUT

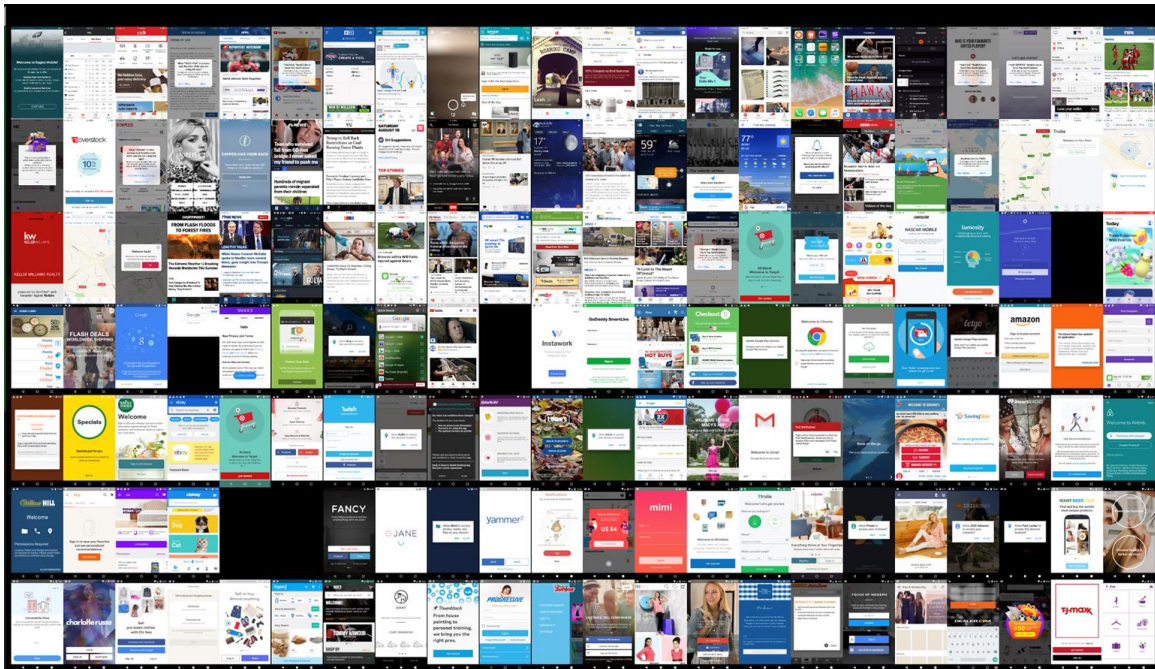
Bonus: Can measure  
performance reliably  
during test execution



28

# “3 Nines”

29



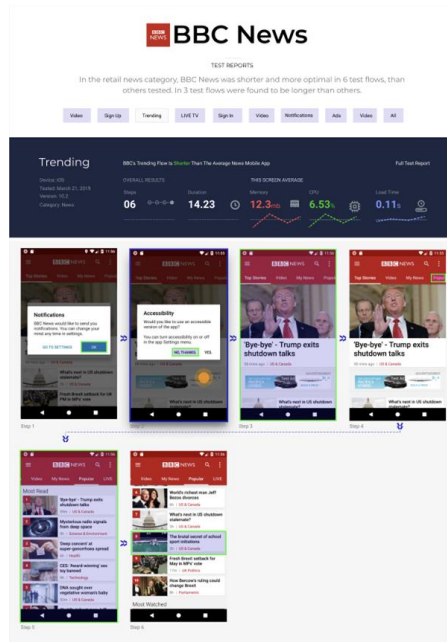
30

See  
Intent  
Judge  
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Feedback



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# WE WANT YOUR FEEDBACK



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AITesting.org

# AI ST

ARTIFICIAL INTELLIGENCE FOR SOFTWARE TESTING



Most of us still  
test software  
like it's 1998

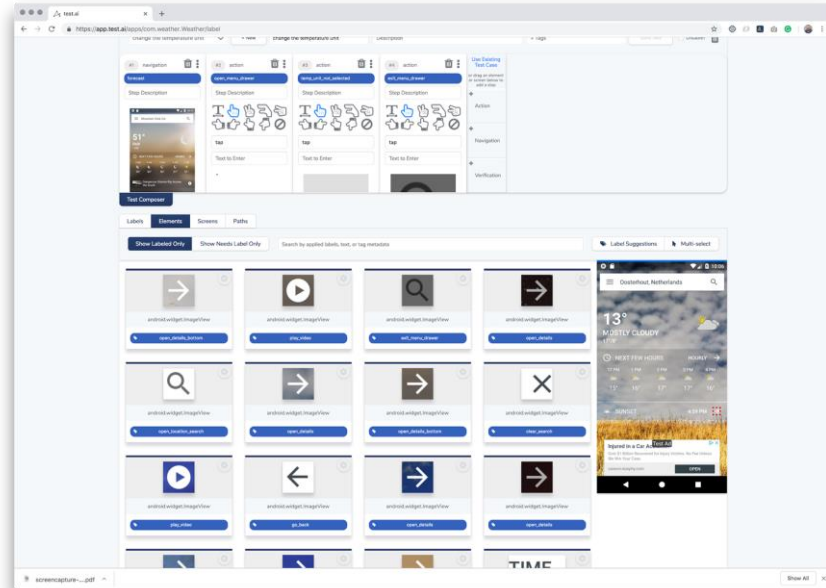
vector@test.ai

Appdiff, Inc. 340 Brannan St #100, San Francisco, CA 94107, United States

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# Custom Tests



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