

Our second spring

Current state of testing with AI

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Introduction

workgroup Testing with AI
since January 2018

many developments
summarized in our whitepaper



AGENDA

Opportunities and challenges

AI in the testing process

Four practical cases with:

AI test tools

AI services

AI DIY

The future of the tester

Marco

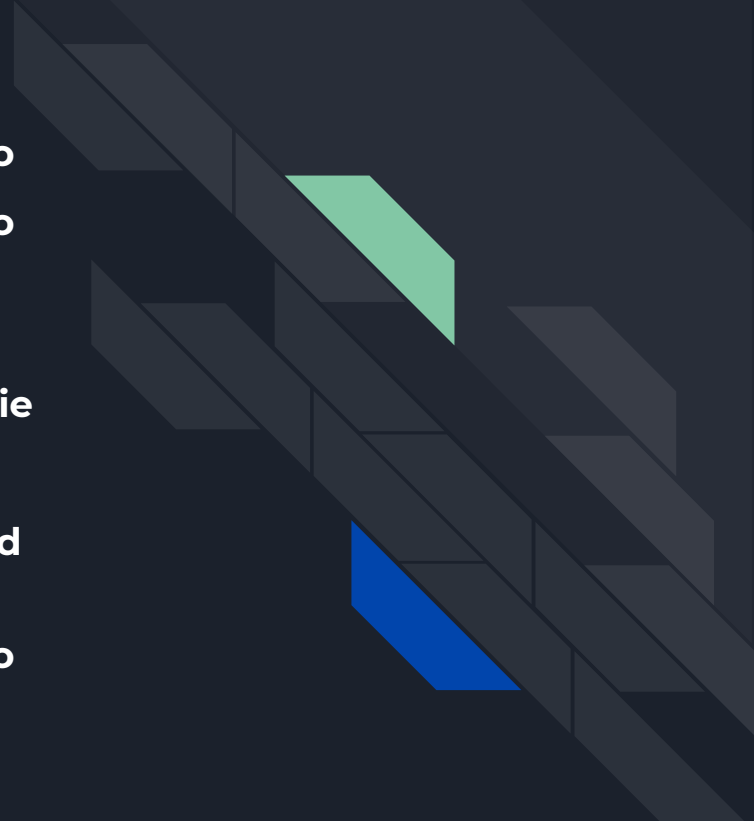
Marco

Hannie

Okto

Gerald

Marco





Opportunities

Recognize objects on the screen

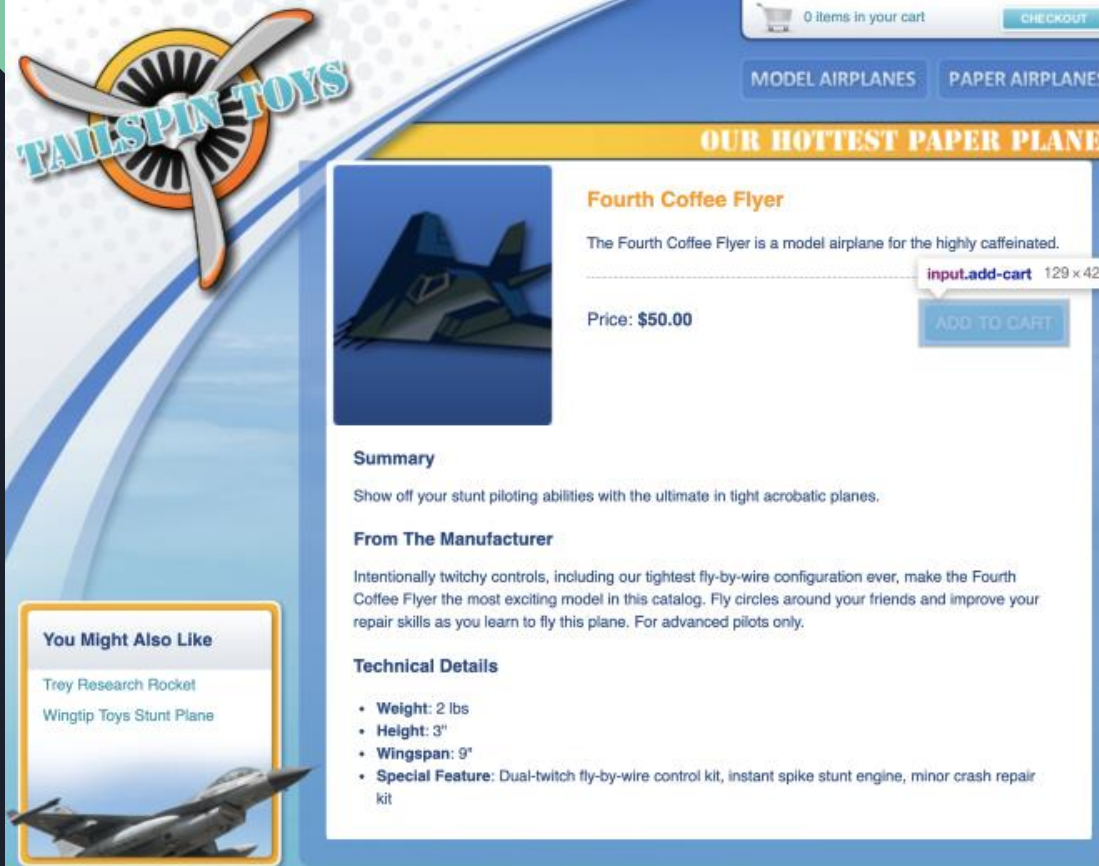
Finding its own way through the application

Recognize trends in data

Recognize text

Generate data

Opportunities




TAILSPIN TOYS

0 Items in your cart CHECKOUT

MODEL AIRPLANES PAPER AIRPLANES

OUR HOTTEST PAPER PLANE



Fourth Coffee Flyer

The Fourth Coffee Flyer is a model airplane for the highly caffeinated.

Price: \$50.00

Summary

Show off your stunt piloting abilities with the ultimate in tight acrobatic planes.

From The Manufacturer


Intentionally twitchy controls, including our tightest fly-by-wire configuration ever, make the Fourth Coffee Flyer the most exciting model in this catalog. Fly circles around your friends and improve your repair skills as you learn to fly this plane. For advanced pilots only.

Technical Details

- **Weight:** 2 lbs
- **Height:** 3"
- **Wingspan:** 9"
- **Special Feature:** Dual-twitch fly-by-wire control kit, instant spike stunt engine, minor crash repair kit

You Might Also Like

- Trey Research Rocket
- Wingtip Toys Stunt Plane



Elements Console Sources Network

```
<div class="product-wrapper">
  <div class="product-detail-top"></div>
  <!--end product-detail-top-->
  <div class="product-detail">
    <div class="product-overview">
      
      <h2>Fourth Coffee Flyer</h2>
      <p>The Fourth Coffee Flyer is a model airplane for the
        highly caffeinated.</p>
      <form action="/Cart/AddItem" method="post">
        <input type="hidden" value="modfcf" name="sku">
        <input type="submit" class="add-cart" value="-- $0
      </form>
    </div>
  </div>
  <!--end product-overview-->
  <div class="product-specifications">...</div>
  <!--end product-specifications-->
</div>
<!--end product-detail-->
<div class="product-detail-btn"></div>
<!--end product-detail-btn-->
<div class="clear"></div>
<!--end clear-->
```

html body div div div div div div product-overview form input.add-cart

Styles Event Listeners DOM Breakpoints Properties Accessibility

Filter :hov .cls +

```
element.style {
}
div.product-overview typography.css:345
input.add-cart {
  display: block;
  float: right;
  width: 129px;
  height: 42px;
  margin: -3px -5px 0 0;
  background: * transparent
  url(../Images/btn-add-cart.png) no-repeat 0 0;
  text-indent: -10000px;
```



margin -3
border 1
padding -
127 x 40
1 -5

Filter Show all

align-items flex-s-
background-attach scroll

Opportunities

0 items in your cart CHECKOUT

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input.add-cart 129 x 42

ADD TO CART

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JSON OUTPUT

```
"status": "Succeeded",
"succeeded": true,
"failed": false,
"finished": true,
"recognitionResult": {
  "lines": [
    {
      "text": "ADD TO CART",
      "words": [
        {
          "boundingBox": [
            1237,
            251,
            1266,
```

Opportunities

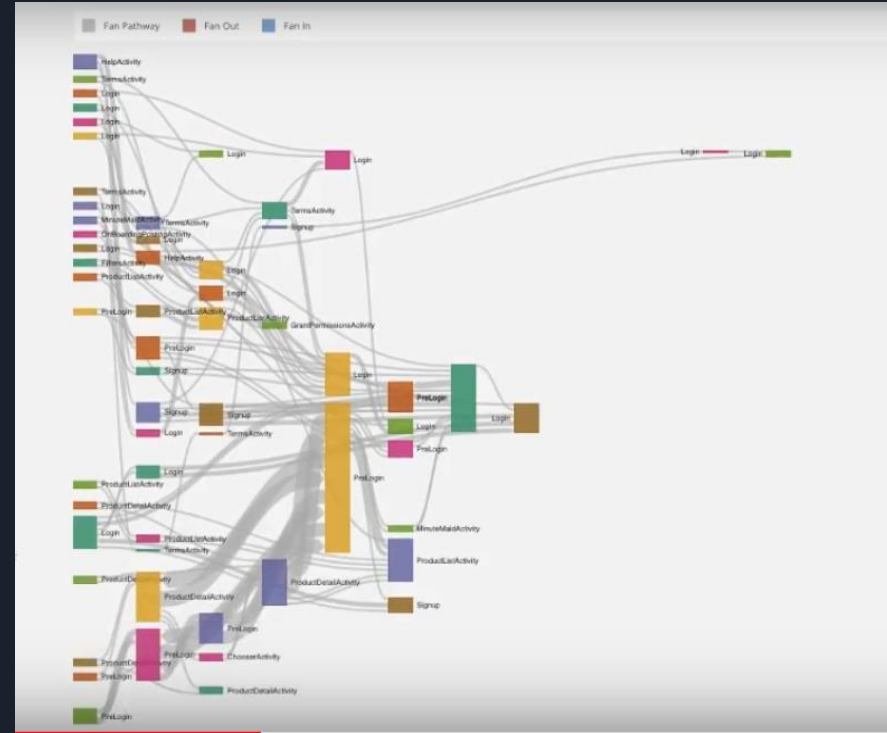
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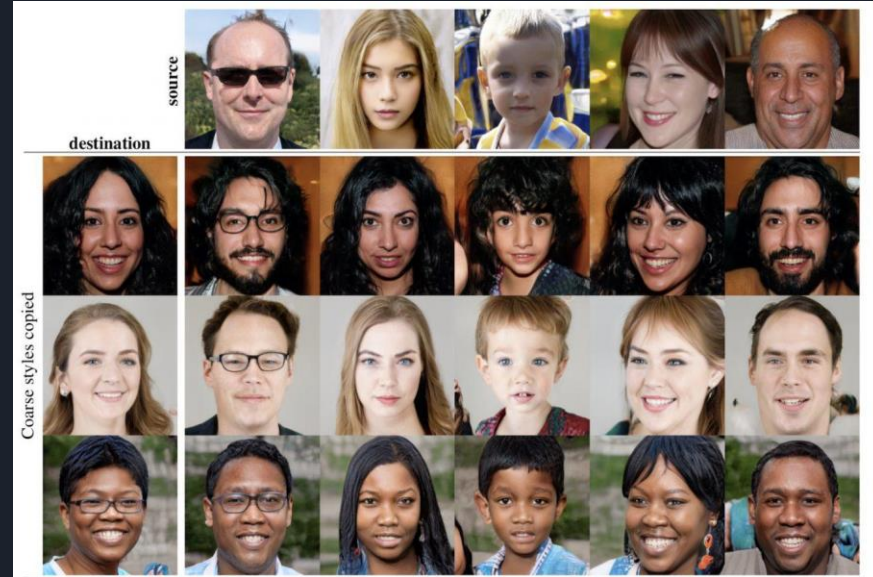
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Challenges

Distrust and high expectations

Dependency on data

Limited explainability of test results

No absolute certainty of the results

Large amount of results to interpret



AI in the testing process

Test management

Test engineering

Testing support

Test management	Plannen	Risico management	Beheer	Rapportage	Bevindingen-beheer	
Test engineering	Voorbereiden	Specificeren	Uitvoeren	Afronden	Infrastructuur	Testdata-management



Test tools

Purchase AI test tool

- on own environment
- upload to cloud

AI decrease as a service

Build AI yourself for testing

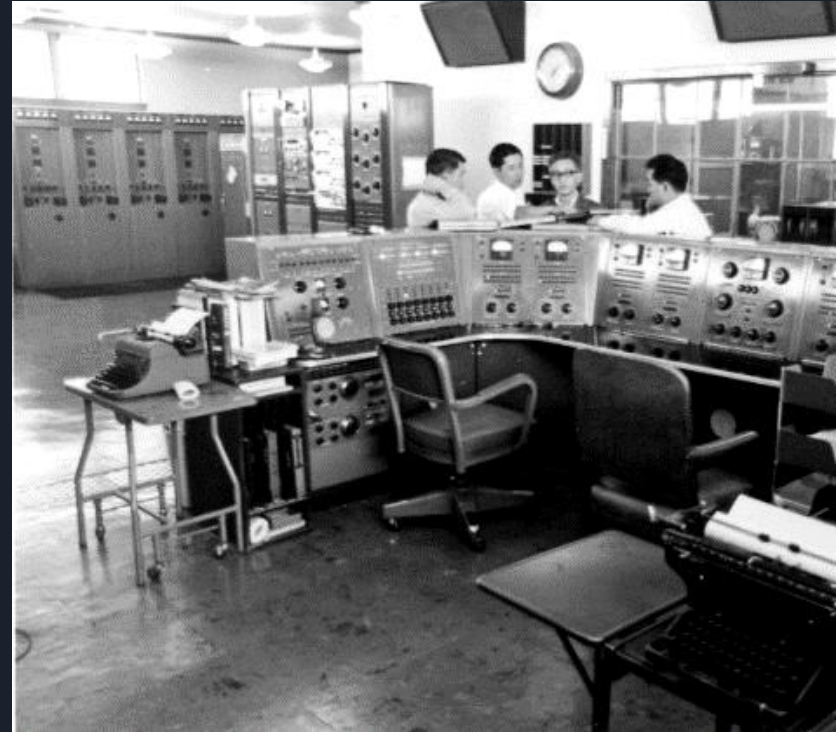
Case 1:

Too many tests for the pipeline

Legacy CRM system

Partly automated testing, partly manually

Historical data from test execution



Case 2:

Many users and devices, small budget

App for the Olympic Games

Short lifecycle, fast delivery

Many devices and screen resolutions etc.

Favorite teams, scores

High focus on usability

In a large number of countries



Case 3:

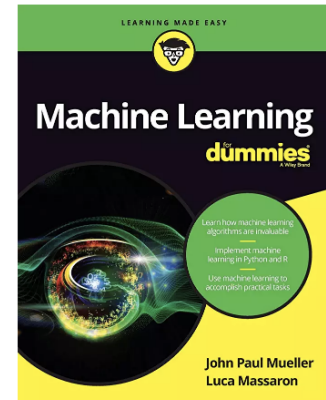
Breaking test cases

Existing webshop

Medium in size

Many Selenium tests and history

Many adjustments and deliveries due to new front-end technology



Machine Learning For Dummies

by [John Paul Mueller](#) and [Luca Massaron](#) |

★★★★☆ 3

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Case 4:

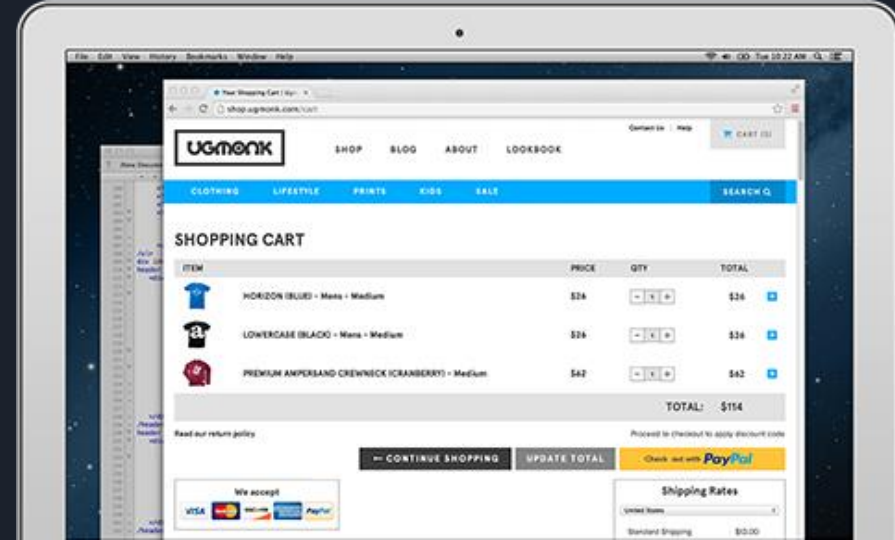
Tests do not match production use

Existing web application

Payment system with privacy sensitive data

Quite a lot of tests are run every build

Still many errors in the live environment





Choosing existing AI test tools?

Advantages

Large selection of tools

Easy to pick up

Very little AI knowledge required

Local or cloud

Cloud services for telephone apps

Disadvantages

Cost

Need multiple tools?

Inner working is unknown

AVG versus tools from outside the EU

New market, many suppliers compete with each other with a lot of marketing and hype



Choosing AI as a service for your testing?

Advantages

Using via API is easy

Proven functionality

Add on on existing test tools

AI used / well trained by many

Disadvantages

Limited in what it can do

Large suppliers / little choice



Choosing to build your own AI for testing?

Advantages

'Free'

Unique solutions that are not available elsewhere

Adaptable to need

Data remains in-house

No data from elsewhere that can affect your AI model outcomes

Disadvantages

Need knowledge

Testing your AI

Time to train and tune AI

Lots of data needed

Limited scalability



The future of the tester

Tools

- Selection
- AI training (data)
- Interpret results

Dealing with the real world

- Functional testing
- Understand the users and the real world

De workgroup continues!

New name:

Testing and AI

New focus for now:

Testing of AI

New members:

You?

Have any questions or ideas, let us know!

