



Onfido introduction



A young man with curly hair is sitting at a desk, looking down at his smartphone with a smile. He is wearing a blue and white plaid shirt over a white t-shirt. In the background, there's a window showing a blurred cityscape. On the desk, there's a laptop, some papers, and a small green object.

The world is moving online
but the means to verify identities
are frozen in an offline world

Industry challenges



Greater Risk

64% increase in online banking fraud in 2015



High Dropout Rates

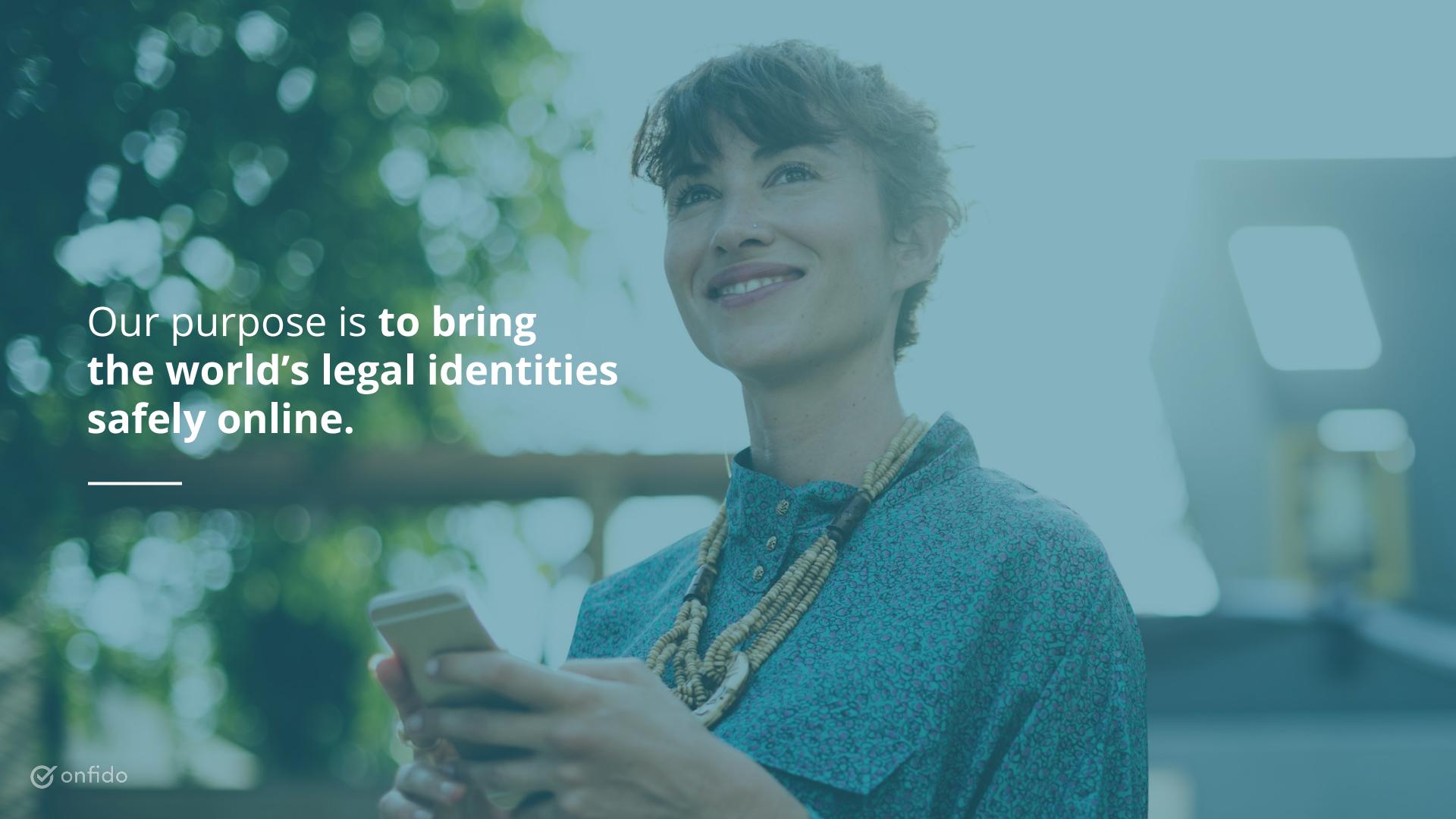
40% average drop-off rate in the financial sector



Manual Processes

\$90bn yearly compliance spend for the top 6 global banks

Introduction to Onfido

A woman with short, wavy hair and a nose piercing is smiling and looking upwards. She is wearing a blue patterned shirt and a long necklace made of small, light-colored beads. She is holding a white smartphone in her hands, which are positioned in the lower-left foreground. The background is blurred, showing green foliage and a bright sky.

Our purpose is **to bring**
the world's legal identities
safely online.

The world's best identity verification engine for enterprises

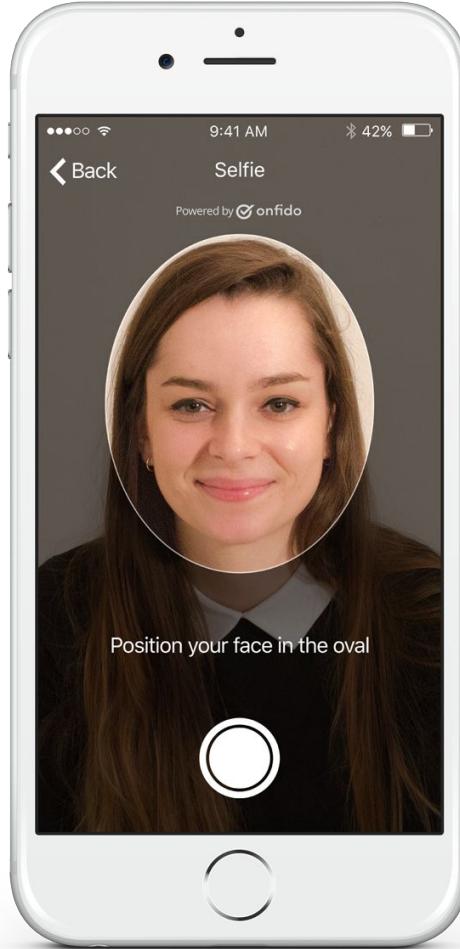
We make it easy for people to get started with you.
They get access to your service and you get access
to a whole new load of customers. It's quick, it's slick,
it's secure. [\[click here or on image to see a demo\]](#)



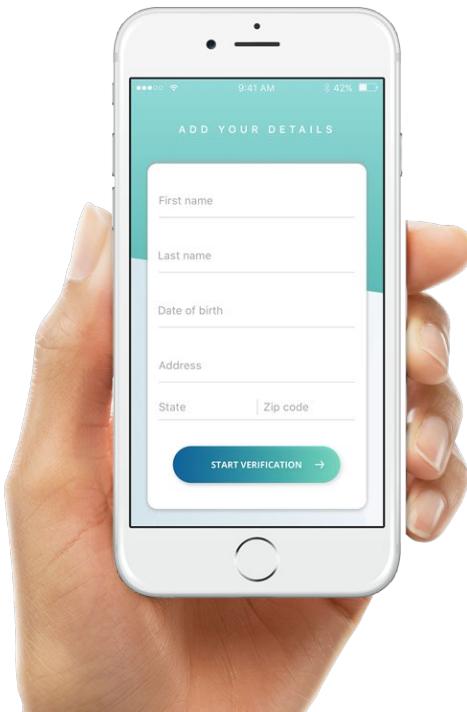


**The user takes a
photo of their identity
document to verify
that it is genuine**

The user takes a selfie or video, which is compared to the image on the identity document



The user provides details allowing us to check their records on electronic databases



Name

Date of birth

Address

About Onfido



Checks available in
195 countries



Over **1,500**
clients globally



Over **\$60M**
in funding



Team of
180

Our Investors



CRUNCH FUND

wellingtonpartners
VENTURE CAPITAL

idinvest
PARTNERS

Microsoft
Ventures

Trusted by more than 1,500 Organizations

UBER



Square



AVIS[®]



Revolut

nutmeg



GOCARDLESS



couchsurfing

TESCO

WHITBREAD



Bla Bla Car

ZOPA

Curve

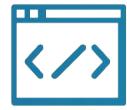
monese

TransferWise



The Document Check

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-D-



Document and face check

How we process documents





Image integrity

Extract data

Fraud check

Sophisticated fraud (hybrid)

Face match



Image quality

Are all the characters on all data points readable?

Colour picture

Is the image colour or black and white?

Conclusive document quality

Is the image of a high enough quality to see microprinting and security features?

Supported document

Is this a document that Onfido supports?
See full list of supported documents [here](#).



Image integrity



Extract data



Fraud check



Sophisticated fraud
(hybrid)



Face match



Classification

Document type is determined to ensure the correct extraction.



Extraction

Data points are extracted using Onfido's Black Hawk OCR.



Standardisation

Extracted data is sorted and arranged in order to carry out fraud checks.



Image integrity

Extract data

Fraud check

Sophisticated fraud (hybrid)

Face match



Field to field consistency

Does the data match the rest of the document and the information provided by the applicant?

Data validation

Do the check sums flag any inconsistencies in the data?

Database

Has the document been passed by police records and our internal watchlist database?



Image integrity

Extract data

Fraud check

Sophisticated fraud (hybrid)

Face match



Template

Is this a recognised document template?

Fonts

Are the all the fonts on this document consistent?

Security features

Can we distinguish the correct security features on this document, and that they haven't been manipulated?

Digital tampering

Can we be sure that no areas have been digitally edited?

Original document present

Is the image of the actual document rather than a scan or ‘photo of a photo’?

Picture face integrity

Can we ensure that the photo on the document hasn't been replaced with a new image?



Image integrity

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Face match



Digital tampering



Copy and move

Auto-detect areas where someone has digitally moved information to change the document details.



Enhanced digital tampering

The ability to digitally scan a document to highlight information that has been tampered with, including its image.



Metadata

By analysing the metadata on a file we can see if the image has been processed by image editing software.

The Facial Check



Image integrity

Extract data

Fraud check

Sophisticated fraud (hybrid)

Face match



Matching selfie to document

Is the person in the photo the same as the person on the document?



Selfie spoofing detection

Can we be sure that this a real photo, or is the user trying to impersonate the person in the document photo?



Image integrity

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Sophisticated fraud (hybrid)

Face match



Matching selfie to document

Is the person in the photo the same as the person on the document?



Selfie spoofing detection

Can we be sure that this a real photo, or is the user trying to impersonate the person in the document photo?



CONFIDENCE SCORE

0.45 - 0.8



Image integrity



Extract data



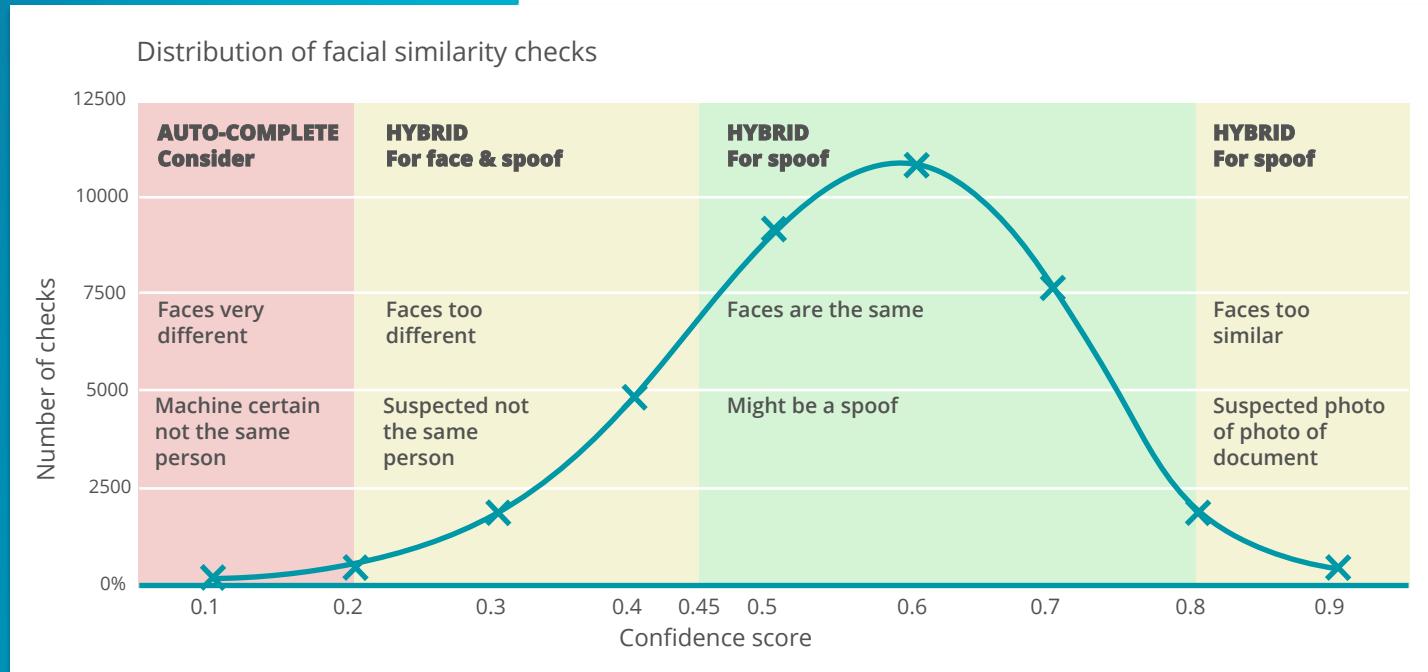
Fraud check



Sophisticated fraud
(hybrid)



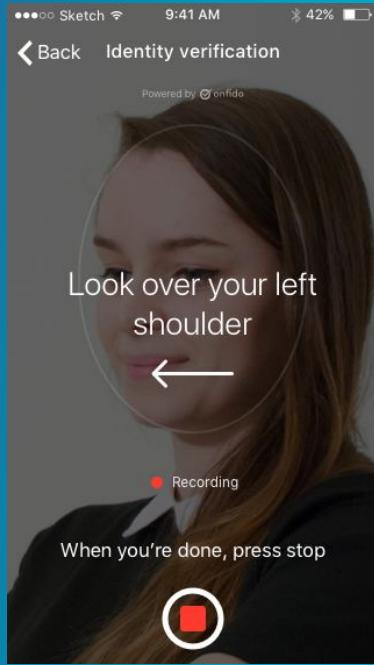
Face match



The Liveness check

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[Video demo here](#)

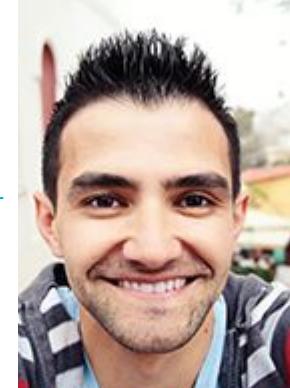
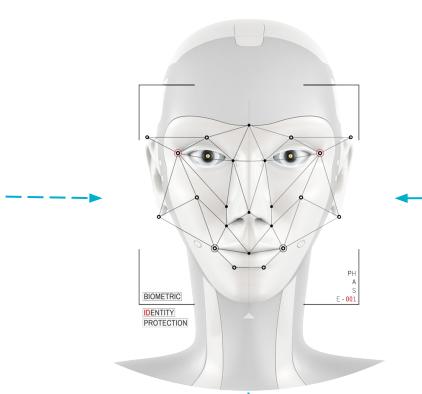
Onfido's liveness detection ensures that the ID uploaded belongs to the user trying to verify themselves.

Below outlines key features we include to ensure the system is not spoofed through various fraud techniques.

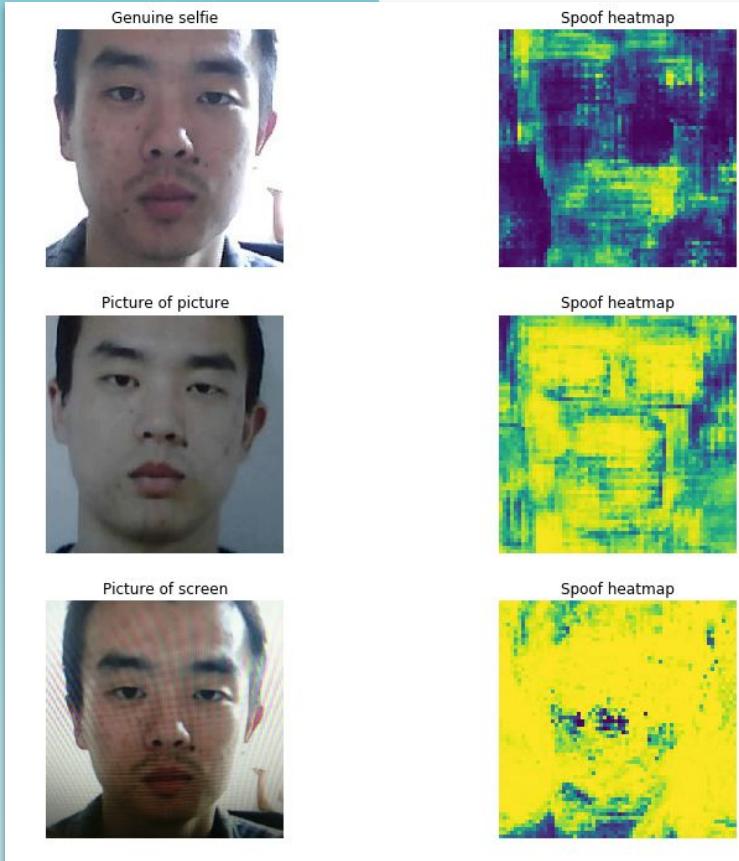
1. Static techniques
 - a. Face extraction and comparison

2. Dynamic techniques
 - a. Heat maps
 - b. Deep learning texture analysis
 - c. Voice detection and comparison

Machine Learning in Facial Comparison



0.1
CONFIDENCE SCORE



Classic Machine Learning

Texture based algorithm automates a large proportion of spoofing detection



Deep Learning

Currently researching deep learning techniques to increase automation rates



Human review

Humans uplift when the machine can't reach a conclusion

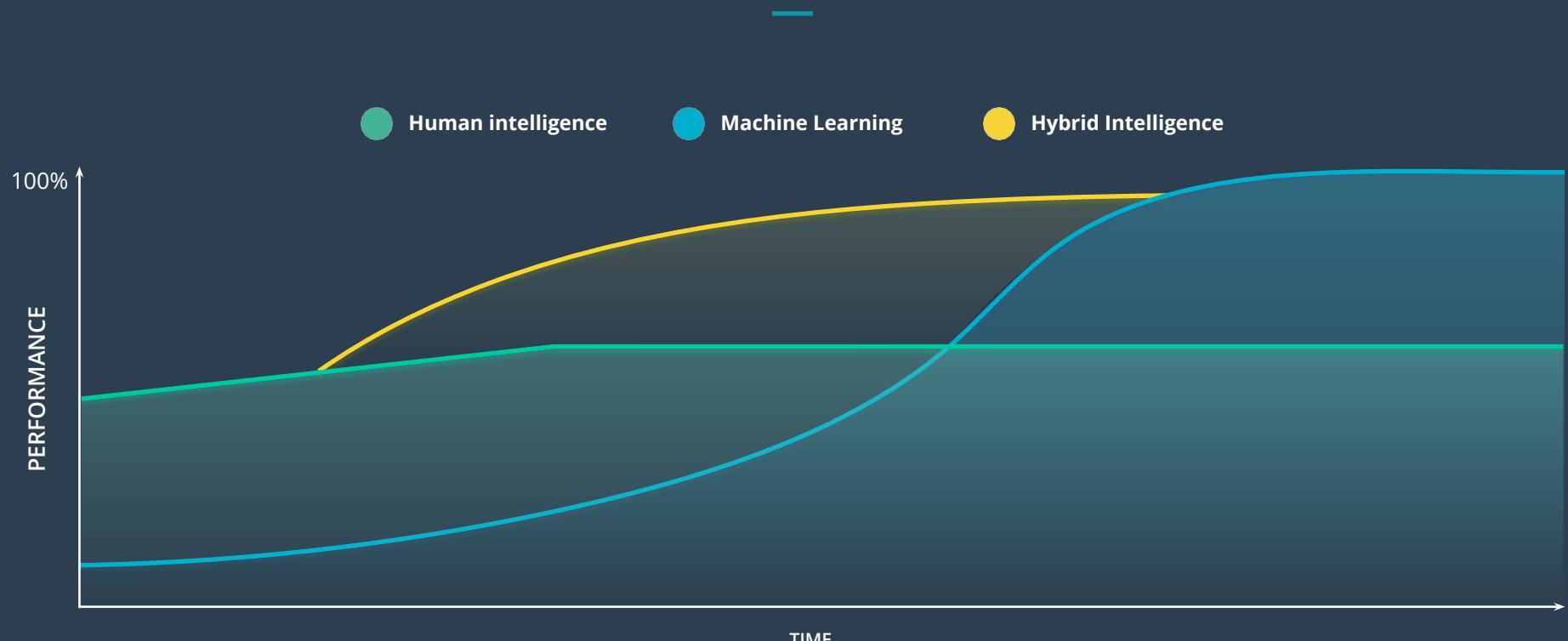
How we differ

</> -⊕-

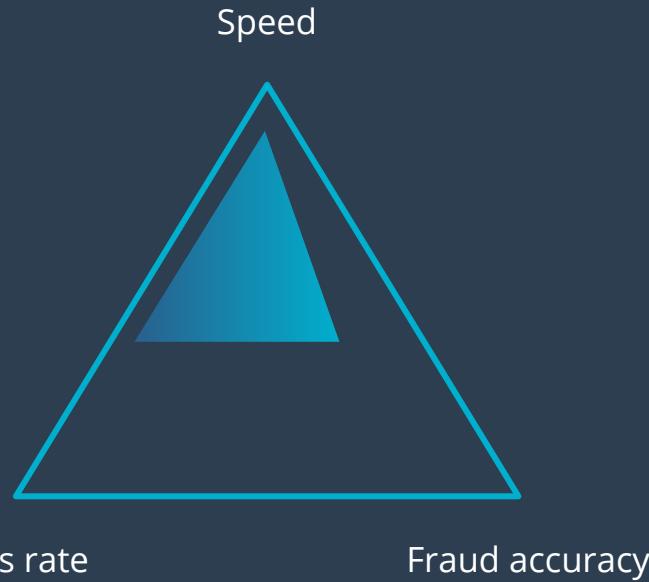


Best solution: hybrid approach

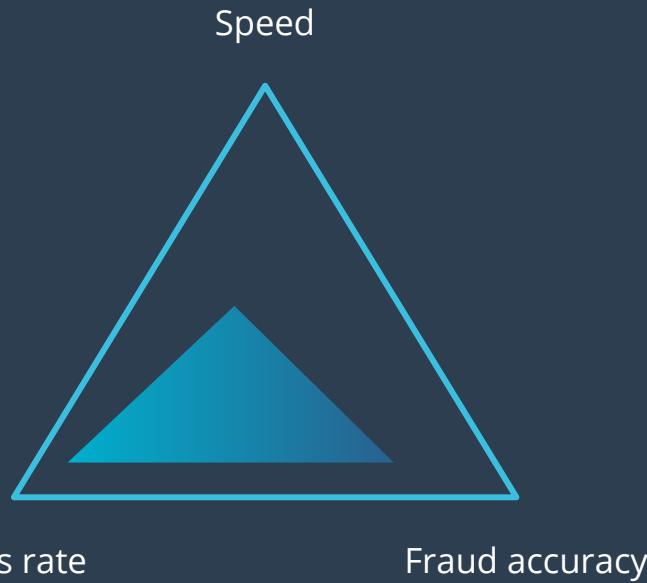
We combine the best of machine learning and human intelligence



Machine only



Human only

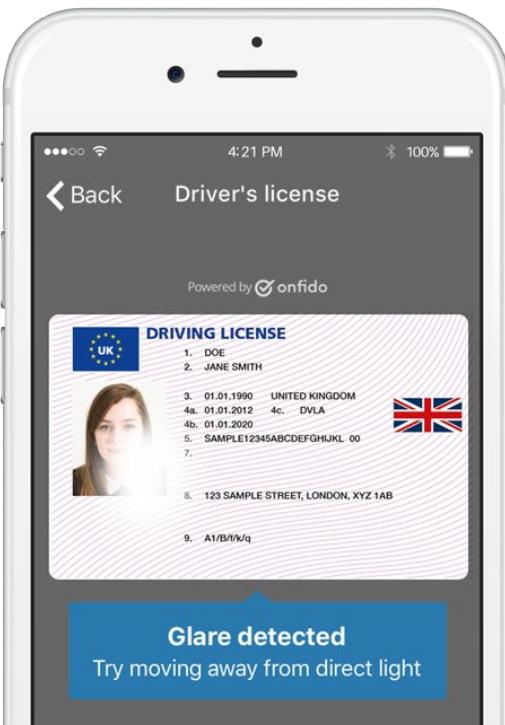


Hybrid only



Input capture

...helps users to submit high quality images which reduces drop-off



95%

First time pass
rate via the SDK

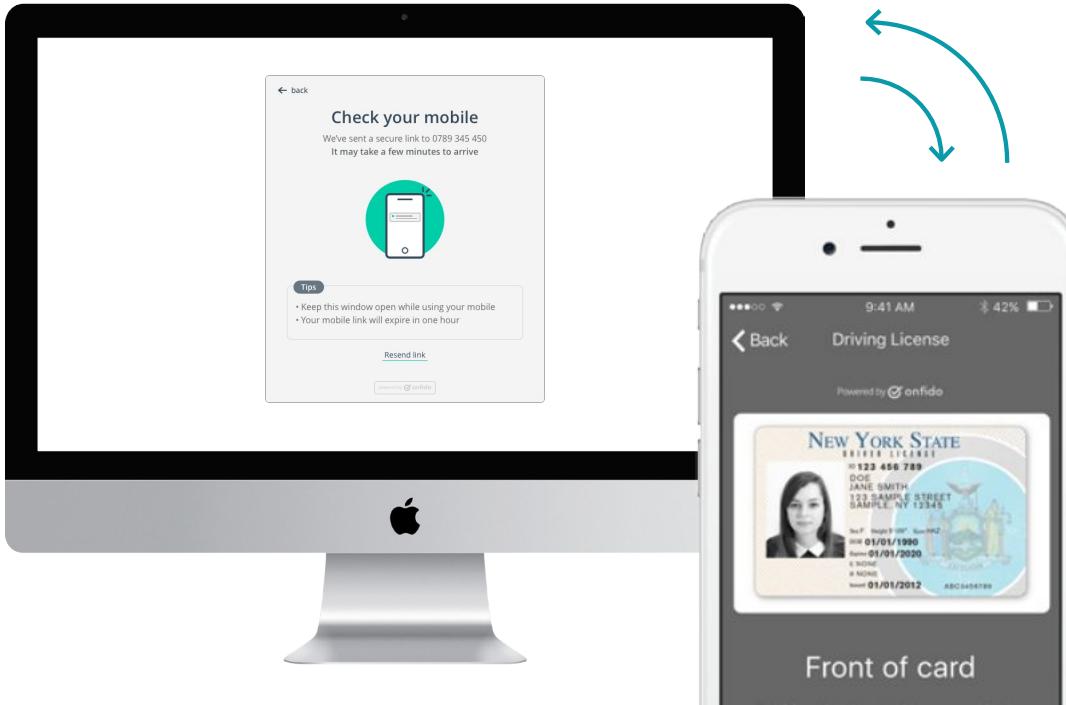
27% Blur detection

reduction in drop-off

23% Glare detection
reduction in drop-off

Cross device flow

... enables a smoother onboarding process



Global coverage

...means we can verify 600 document types from 195 countries



Granular results

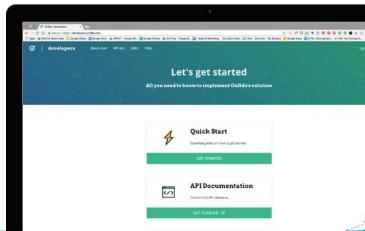
... fully customisable based on what's important to you

Face	Document			
FACIAL SIMILARITY	IMAGE INTEGRITY	VISUAL AUTHENTICITY	DATA VALIDATION	DATABASE CHECKS
<input checked="" type="checkbox"/> Image integrity	<input checked="" type="checkbox"/> Colour picture	<input checked="" type="checkbox"/> Original document present	<input checked="" type="checkbox"/> Document expiration	<input checked="" type="checkbox"/> Compromised document database
<input checked="" type="checkbox"/> Face comparison	<input checked="" type="checkbox"/> Conclusive document quality	<input checked="" type="checkbox"/> Digital tampering	<input checked="" type="checkbox"/> Gender	<input checked="" type="checkbox"/> Police record database
<input checked="" type="checkbox"/> Visual authenticity	<input checked="" type="checkbox"/> Supported document	<input checked="" type="checkbox"/> Picture face integrity	<input checked="" type="checkbox"/> Document numbers	
	<input checked="" type="checkbox"/> Image quality	<input checked="" type="checkbox"/> Security features	<input checked="" type="checkbox"/> Expiry date	
		<input checked="" type="checkbox"/> Template	<input checked="" type="checkbox"/> Date of birth	
		<input checked="" type="checkbox"/> Fonts	<input checked="" type="checkbox"/> MRZ	
		<input checked="" type="checkbox"/> Face detection		

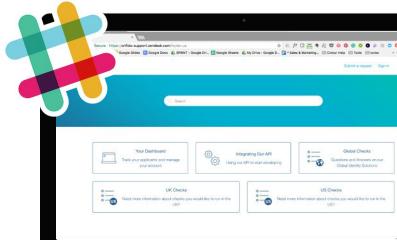
Integration tools

...help your developers integrate quickly and easily

**RESTful API &
Developer hub**



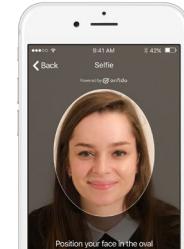
Flexible support



Salesforce integration



**ID Capture SDK for iOS,
Android and JavaScript**



What this means for you

1

Increase revenue

Identify thin credit file individuals

Reduce customer drop-off
through a better UX

Get customers on board faster

2

Cut costs

Reduce internal manual overheads

Reduce your Customer Acquisition
Cost by reducing drop-off

3

Reduce risk

Identify suspicious applicants
through proprietary fraud
detection algorithms

Empower your Compliance team
through granular results

... and how it's helped our clients

1

drivy

23%

decrease in drop-off
at onboarding stage

2

Revolut

6,330

hours of manual
processing saved
per year

3

coinfloor

72%

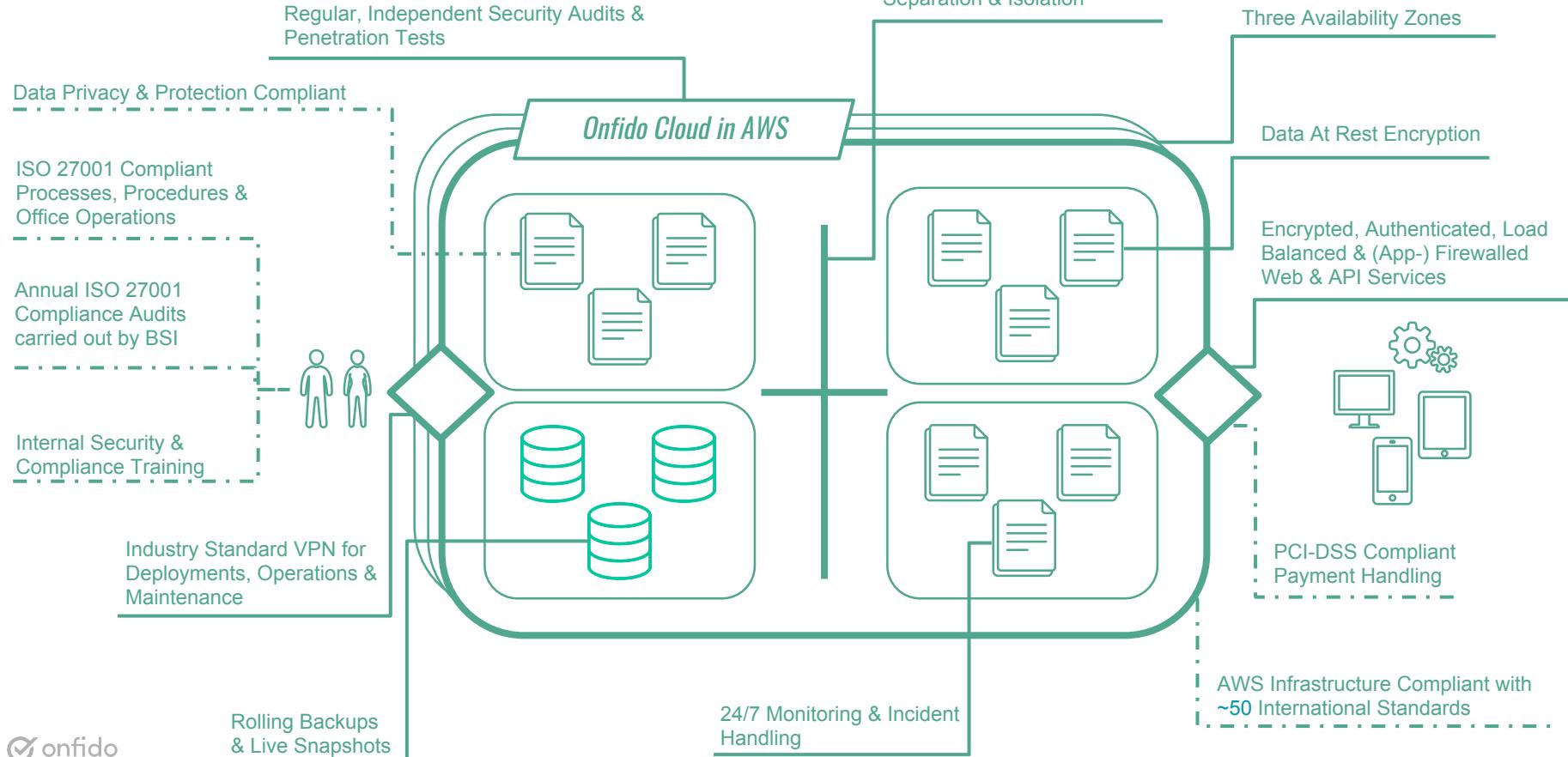
decrease in fraud rate
within 6 months of
switching to Onfido



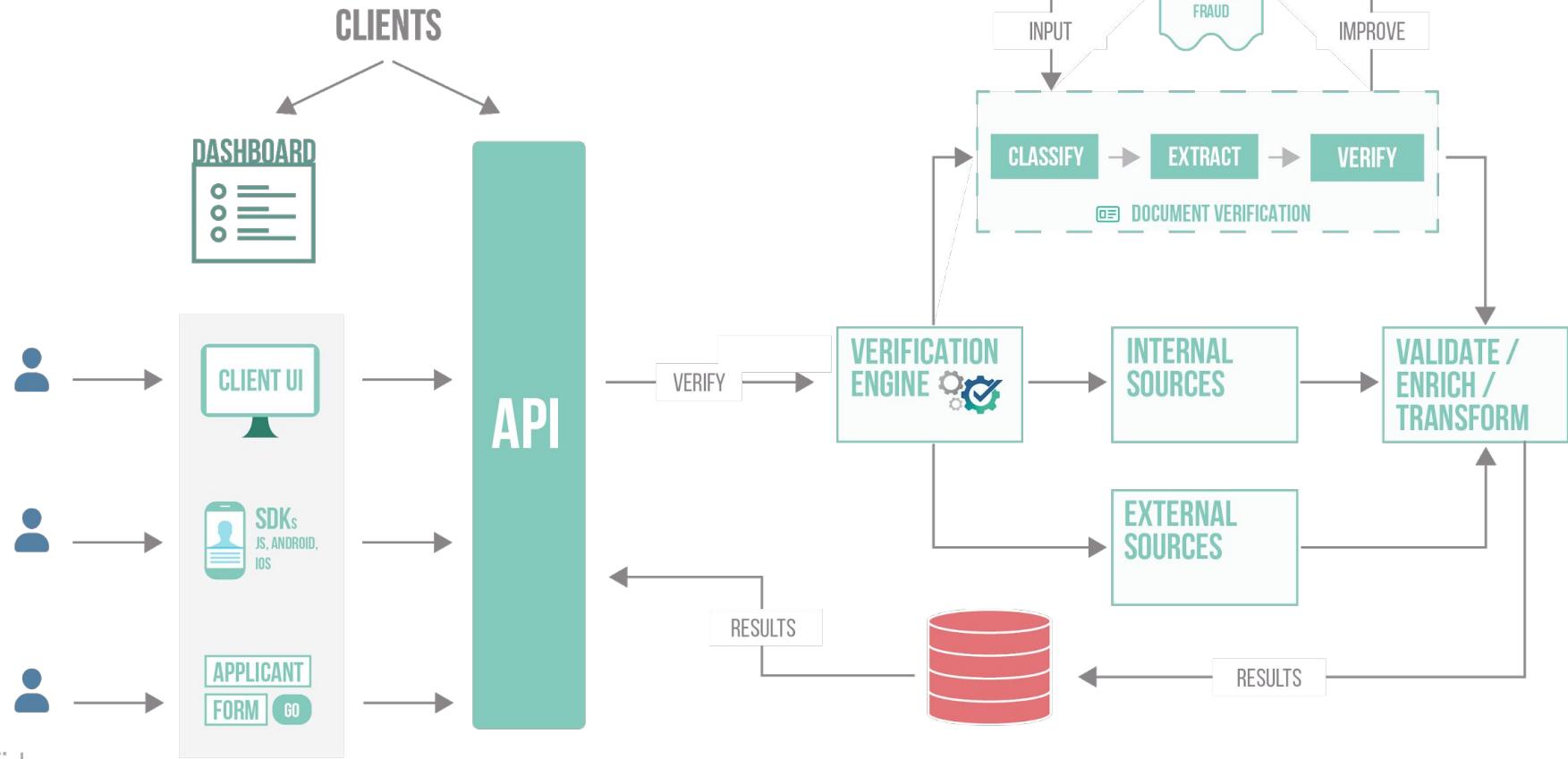
Appendix:

Developers, security and audit

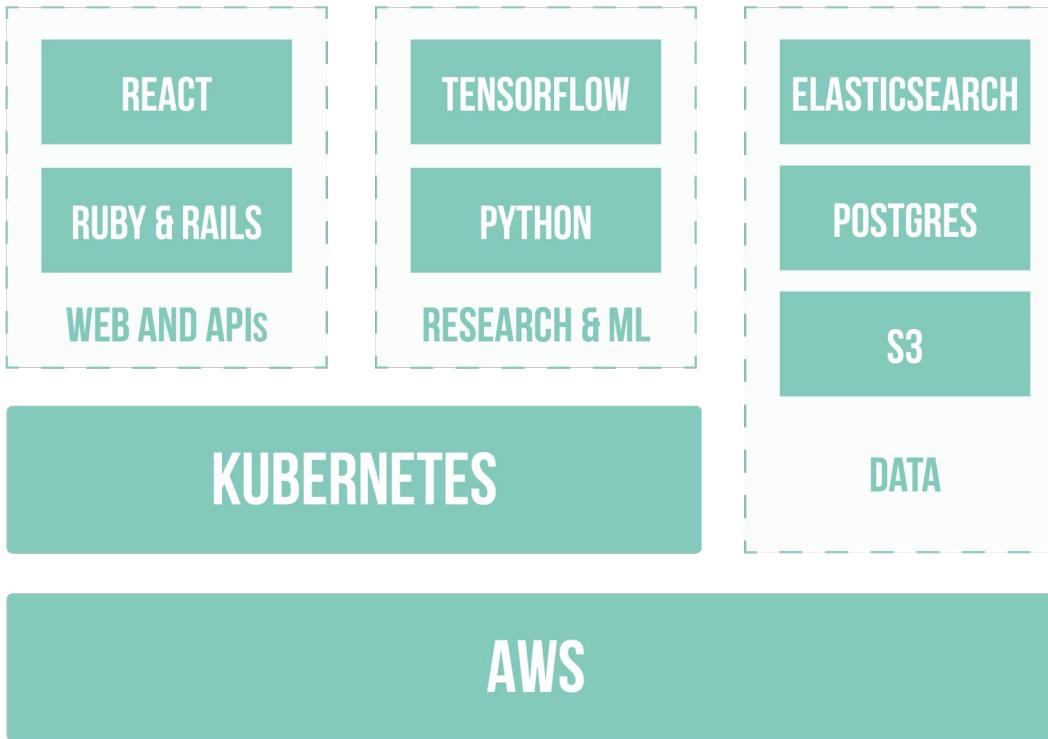
Security & Compliance



Platform Architecture



Technology stack



Thank you

