

Automated Intelligence





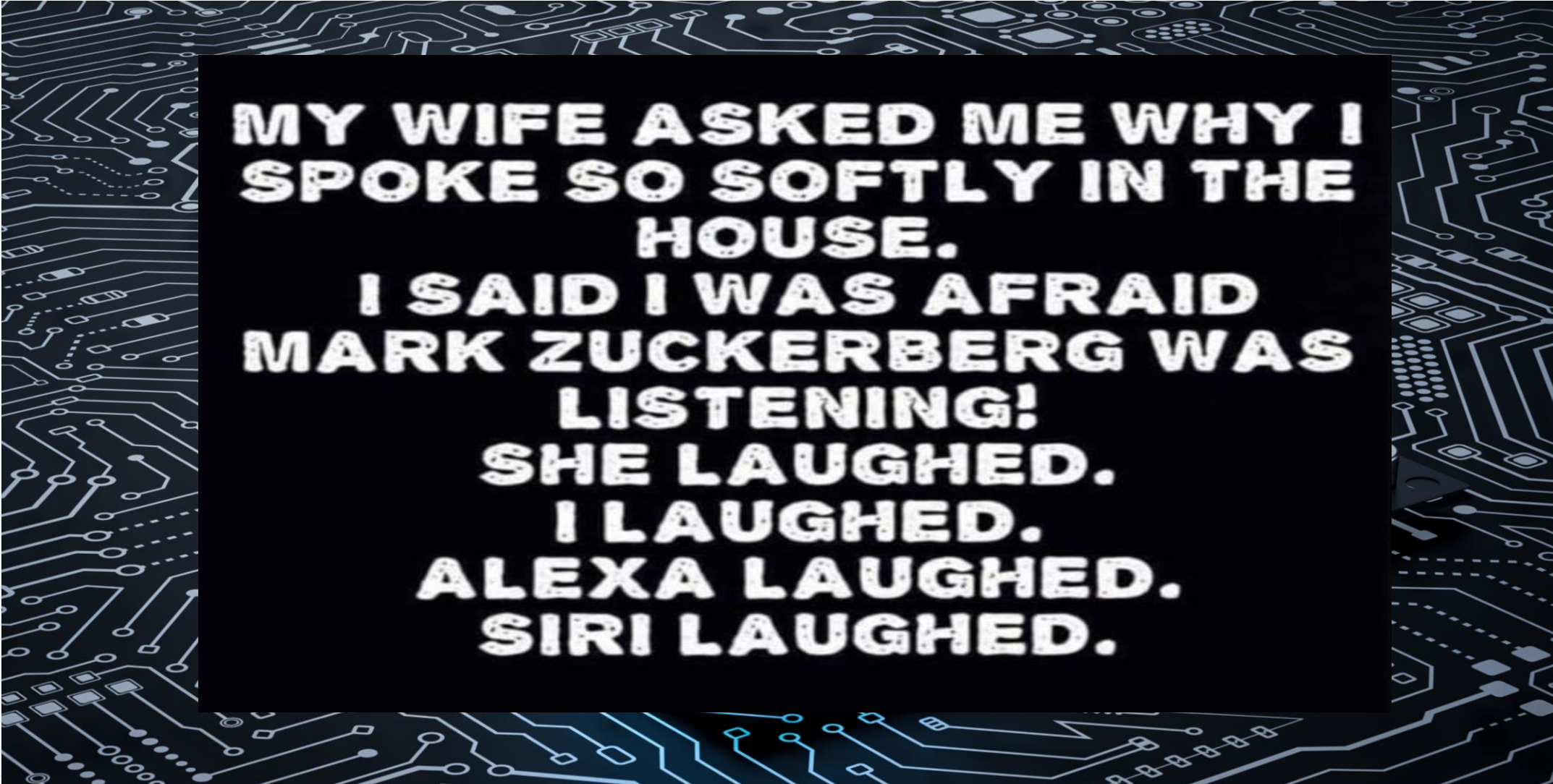
The human Brain



Estimating....

If you answered 10 cents you are inclined to believe in religion. If you answered 5 cents you are inclined to disbelieve. Why? Because, according to research reported in the journal [Science](#), the 10 cent answer indicates that you are an intuitive thinker, and the 5 cent answer indicates that you solve problems analytically, rather than following your instincts.

Automated Intelligence and the virtual assistant



**MY WIFE ASKED ME WHY I
SPOKE SO SOFTLY IN THE
HOUSE.
I SAID I WAS AFRAID
MARK ZUCKERBERG WAS
LISTENING!
SHE LAUGHED.
I LAUGHED.
ALEXA LAUGHED.
SIRI LAUGHED.**

The rise of the virtual assistant



Alexa,

Where are the
most intelligent
credit people
globally?

Virtual Humans



Our digital assistant, Jamie, is currently taking a break and will be back again soon.

FaceMe[®]

Intelligent Digital Human Platform



GOOGLE

Mashable

Hi, how can I help?
Make me a haircut appointment on Tuesday
morning anytime between 10 and 12.
No problem. I'll make you an appointment and
update you soon.

*So what you're gonna hear is the Google
Assistant actually calling a real salon*

Pause (k)

M

Biometric ID using APLY



HOME

TOOLS

DATA

SECURITY

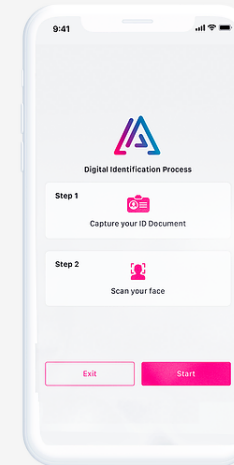
DEMO

ABOUT US

RESOURCES

SIGN UP/ LOG IN

BEFORE
APLY.



AFTER
APLY.

On-line account opening

Let's get started, you'll need...

- To be a New Zealand resident / citizen living in New Zealand who is 18 years or older and will be the sole signatory.
- A New Zealand Passport or Drivers License on hand for verification.

All fields are mandatory unless otherwise stated.

Select your account

Westpac Electronic

Free electronic transactions* – great if you prefer banking online, and hardly ever need to step into branch.

SELECTED



This is a personal account owned by you and you would be the sole signatory on this account.



Westpac Earner

Earn interest, calculated daily, on an average monthly balance of \$5,000 or more.

SELECT



Westpac Access


Need flexibility? You can either pay-as-you-go with no monthly fees*, or pay a flat monthly fee to cover all your transactions.

SELECT

 [Show account benefits and fees](#)

Biometric analysis using AI

- **Applicant prompted to key address (which is fully populated based on partial key)**
- **Applicant then prompted to take photo of ID**



Step 1: Capture your ID document
Please take an image of your Drivers Licence or Passport


I authorise Westpac to release my information to a third party agency so that they can verify my identity online.

Residential address ⓘ

Search address

20/332 Great North Road, Grey Lynn, Auckland 1021

Use our quick camera capture tool to grab your details and save time



Take photo of Driver Licence



This document contains confidential information. Neither this document, nor any of the information it contains, may be disclosed to third parties without the prior written consent of Centrix Group Ltd.

Credit on-line now!

Step 1: Capture your ID document

Please take an image of your Drivers Licence or Passport

I authorise to release my information to a third party agency so that they can verify my identity online.

Residential address ?

Search address

20/332 Great North Road, Grey Lynn, Auckland 1021



Data captured to application form

ID document Captured



Step 2: Confirm your information

We captured some information for your ID - please check everything is correct

Your name ?

Title

Mr

First name

David

Middle name (optional)

Last name

Langeveldt

Name on card

DAVID LANGEVELDT

Date of birth

30

03

1978

Select ID type ?



NZ Driver licence



NZ Passport

Driver licence number

DF573869

Driver licence version

811

Driver licence expiry date

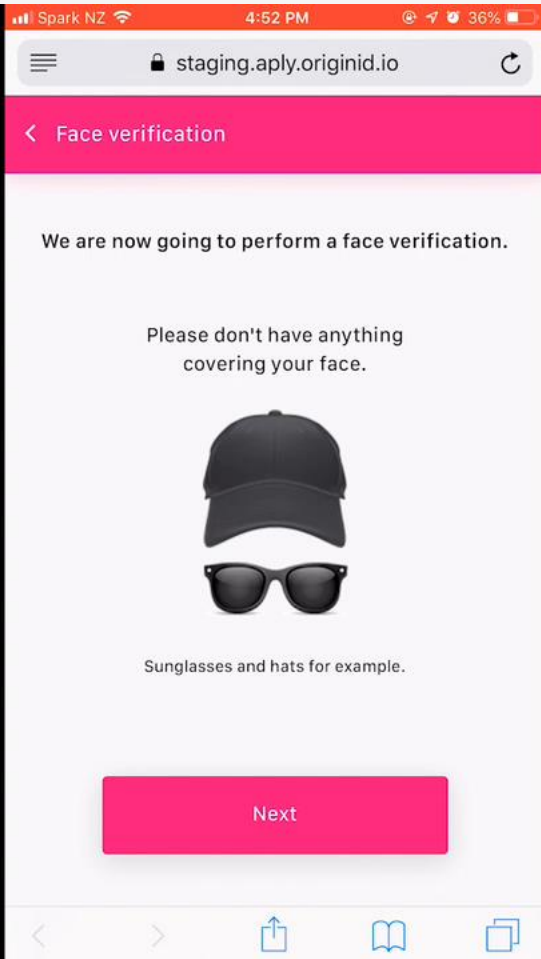
06

09

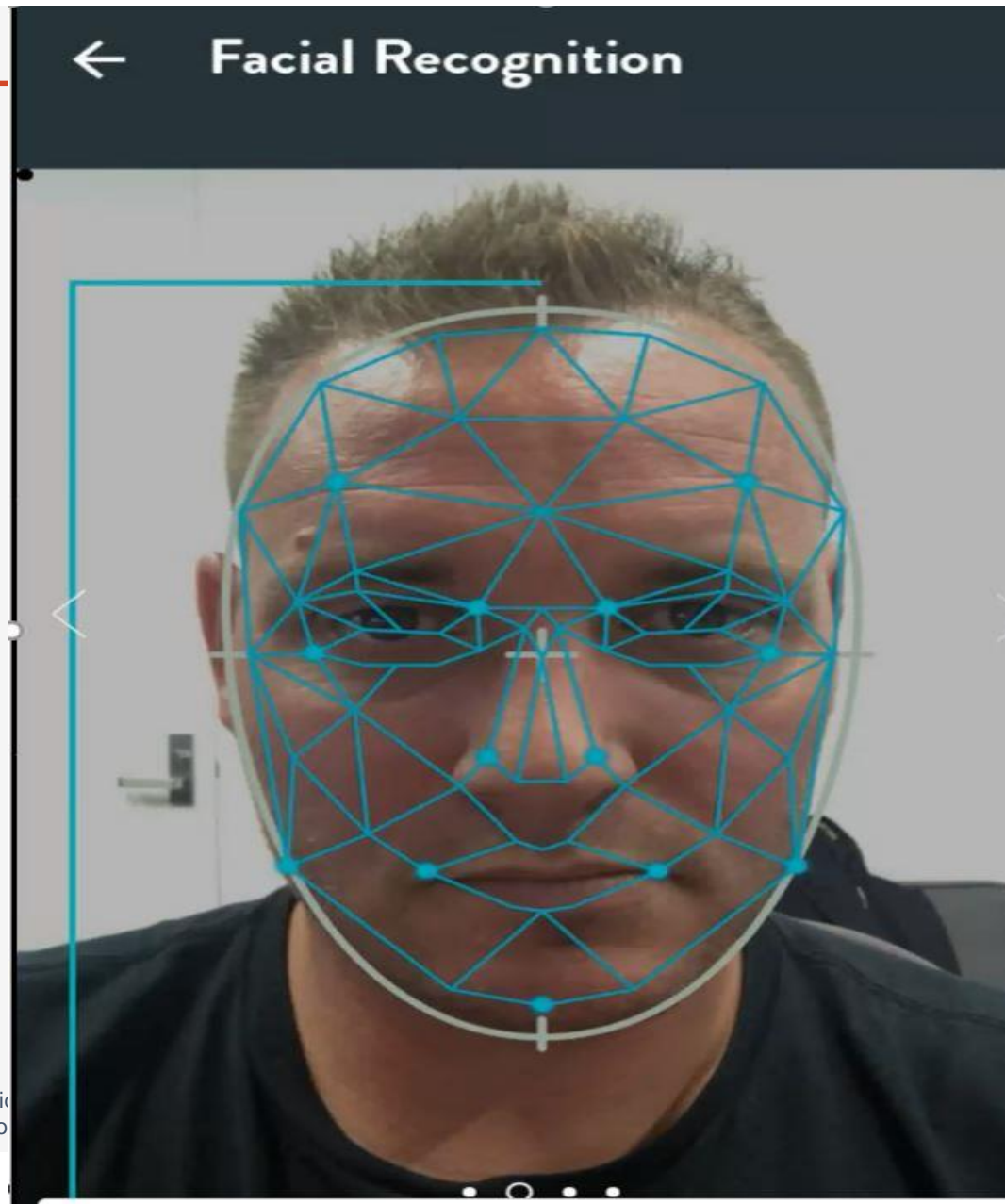
2024

Residential address ?

20/332 Great North Road, Grey Lynn, Auckland 1021



Facial recognition analysis takes place in background



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Facial recognition analysis takes place in background

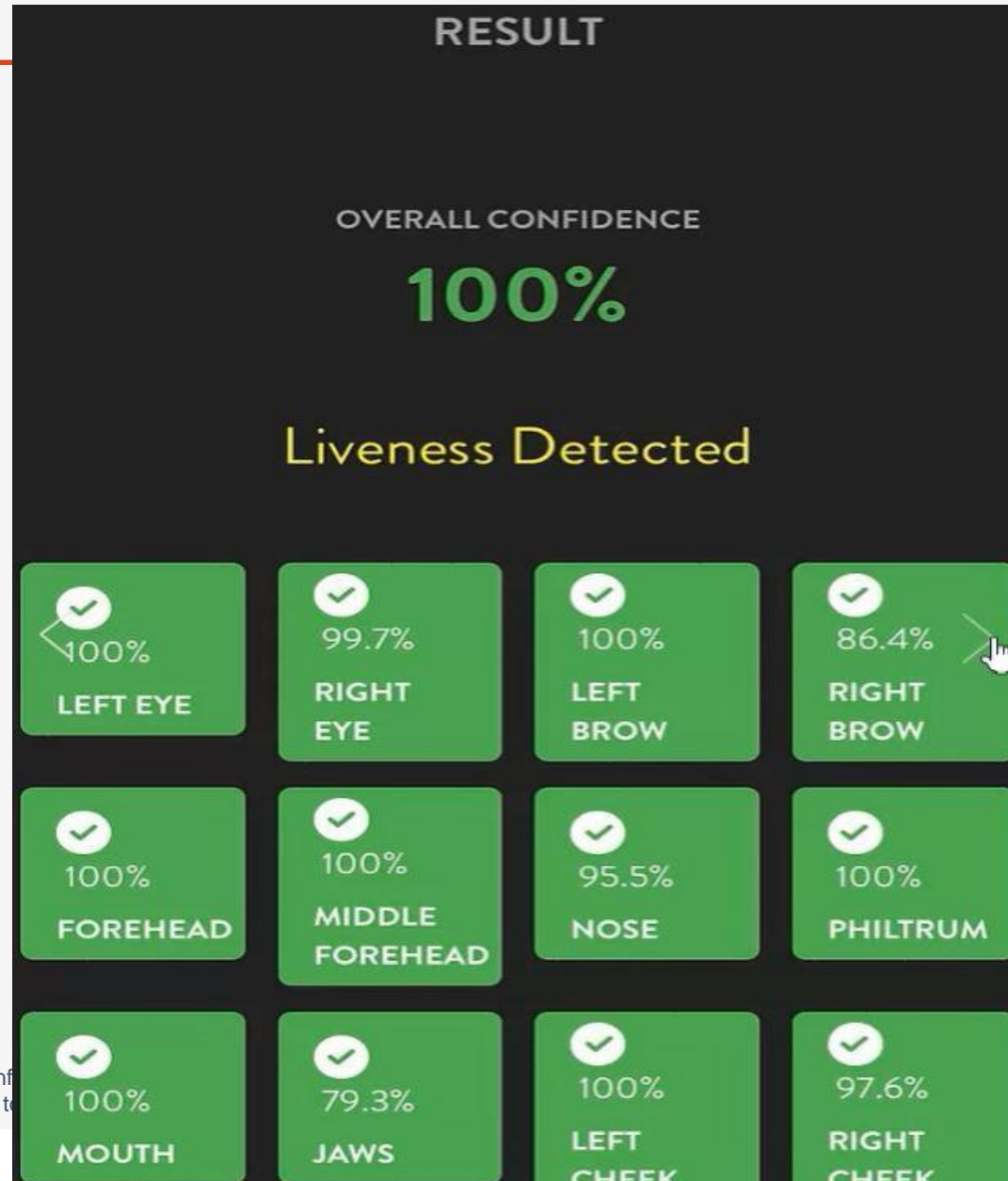


Image captured and data captured to application form

Image Captured Successfully

Your details have now been captured.
Please check the information is correct before proceeding with your application

[Continue](#)

Smart ID AML check

Smart ID Verification Report

LANGEVELDT, DAVID

Subscriber Reference: Sample Report
Enquiry Number: 2776668183
Issue Date and Time: 28/03/2017 11:23:17



Consumer Data Supplied

Name: LANGEVELDT, David
Gender: Male
Date of Birth: 30/03/1978
Address: 23 Duncan Terrace, Kāpiti, Wellington 6022
NZ Driver Licence: DF5738**, 811
NZ Passport: Not Provided



1 DOB 2 Date of issue 3 Date of expiry

Smart ID Verification

Smart ID Verified: Yes

[Smart ID Verification rules](#) require a number of trusted data sources to have matched. Please select the link for further clarification.

Name and Date of Birth Verified: Yes

Name and Address Verified: Yes

Summary of Data Sources Searched:	Name	Date of Birth	Address
Comprehensive Account			
Retail Energy Account			
NZ Property Owner		NA	
NZTA Driver Licence			NA



4 Entitlements

5 If person is an organ donor it will say "DONOR" if they are not a Donor it will be blank.

6 Drivers Licence Number

7 Drivers Licence version number

PEP Watchlist


International Watchlist PEP Status: Clear


Result Indicators


- Match or Verified 'Yes'
- PEP Watchlist 'Hit' or Verified 'No'
- Data does not match
- Data not present on data source
- NA Not applicable as the data source does not hold this data type

OKAY TAKE ME BACK

1 **Your product** 2 **Your details** 3 **Review & confirm**

ID document Captured 

Details Captured 

ID & Address Verified 

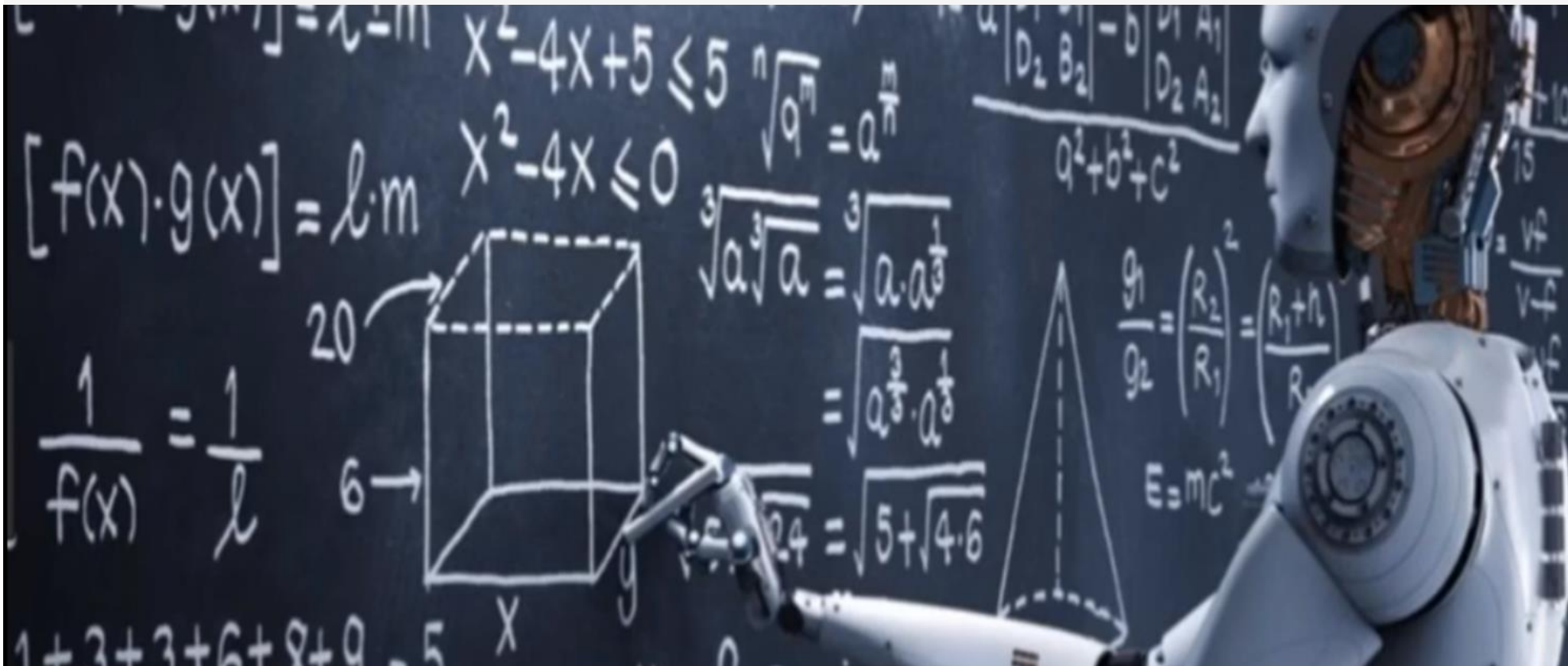
[Submit my Application](#)

Your new account has been

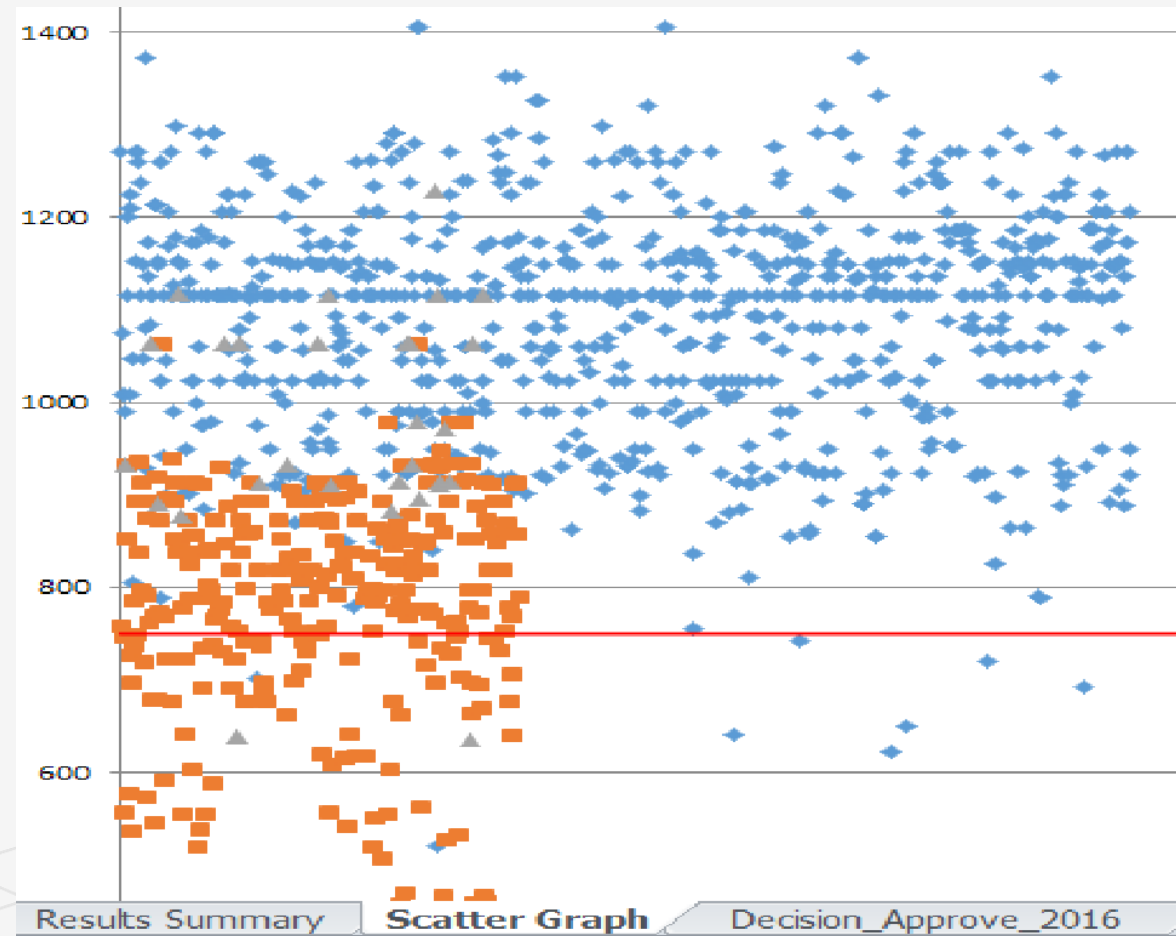
Approved



Machine Learning



Decisioning



Consumer Credit Report
MERCURY, MONTGOMERY



Subscriber Reference:
Enquiry Number: 7575525377
Issue Date: 07/04/2015

Summary Information

Age of File: 23/01/2007

⚠ Judgments: 5
⚠ Insolvency Notices: 4
⚠ Credit Defaults: 3
✅ Court Fines: No
⚠ Driver Licence Verification: No

Company Affiliations: 3
File Activity: 14

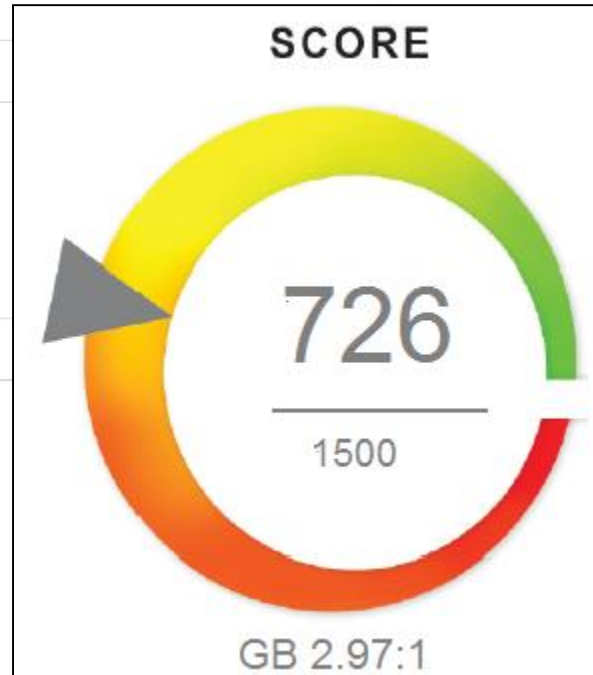
Consumer Information

Name: MERCURY, Montgomery
Gender: Male
Date of Birth: 01/01/1980

Also Known As:
MERCURY, Montgomery
MERCURY, Montgomery Paul
MONTGOMERY, Mercury
MERCURY, Montgomery Charles

Latest Known Address:
1/1 Mercury, Milson, PALMERSTON NORTH

Other Known Previous Addresses:
1 Astelia Court, Milson, Palmerston North
8 Dillon Bell Road, Whataupoko, Gisborne
66 Rongotal Road, Kilbirnie, Wellington
24 Anywhere Street, WHITEBY, PORIRUA
19 Marine Parade, Napier
82 Beechey Street, Pirongia,
1 Main Road, Blenheim,
23a Bracket Rd, Meadowbank,
1 Mercury Street, Milson, Palmerston North 4414



Score	Good : Bad Odds
360	0.125
440	0.25
520	0.5
600	1
680	2
760	4
840	8
920	16
1000	32
1080	64
1160	128
1240	256
1320	512



8 good performing accounts for every 1 that goes bad

Property Ownership

powered by CoreLogic

Address	Title Number	Transfer Date
8 Dillon Bell Rd, Whataupoko, Gisborne District	GS1A/413	23/02/1965
66 Rongotal Rd, Kilbirnie, Wellington City	WN365/186	22/02/2012

Important Note:

The above addresses are those that we have matched to the subject consumer. It is possible the subject is the beneficial owner of other properties.

Microsoft Azure
Why Azure Products Documentation Pricing
Machine Learning
Powerful cloud based an

Google Cloud Platform
Products Solutions Launcher Pricing Customers Documentation Support
Cloud Platform x Search this site

SAS THE POWER TO KNOW
Products & Solutions Industries Support Learn SAS Partners About SAS
Machine Learning

aws
Machine Learning

IBM
Discover how machine learning can be your competitive advantage

Oracle Machine Learning
one hands of ev
Solutions Pricing Getting Started
ML Application Services ML Platform Ser
ing on AWS

DataRobot

The world's most advanced Automated Machine Learning platform

2012

FOUNDED
HQ in Boston, MA

\$125M+

IN FUNDING

400,000,000+



MODELS BUILT ON
DATAROBOT CLOUD



150+

DATA SCIENTISTS &
ENGINEERS (OF 300+)

4

kaggle #1 RANKED
DATA SCIENTISTS

50+

kaggle TOP 3 FINISHES

Begin a project by dragging a dataset here

or

simply import from:

Data Source

URL

HDFS

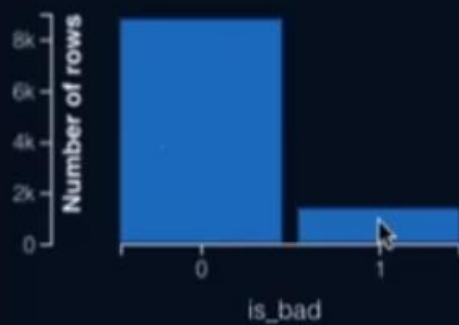
Local File

	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	q_last_6mt	mths_since_l	mths_since_lo	open_acc	pub_rec	revol_bal	revol_util	total_acc	initial_list_st	mths_since_l	policy_code	is_bad
2	0	NA	NA	15	0	12087	12.1	44	f	NA	1	0
3	2	NA	NA	4	0	10114	64	5	f	NA	1	0
4	0	NA	NA	4	0	81	0.6	8	f	NA	1	0
5	0	16	NA	6	0	10030	37.1	23	f	NA	1	0
6	4	NA	NA	8	0	10740	40.4	21	f	NA	1	0
7					0	1715	26.4	25	f	NA	1	0
8					0	5466	11.1	29	f	NA	1	0
9					0	10254	85.0	10	f	NA	1	0

CreditScore	Individual's current credit score	0	1715	26.4	25	f	NA	1	0
ComprehensiveArrearsL3M	Count of arrears over past 3 months Total number of account arrears in the last 3 months	0	5466	11.1	29	f	NA	1	0
ComprehensiveArrearsL6M	Count of arrears over past 6 months Total number of account arrears in the last 6 months	0	10254	85.0	10	f	NA	1	0
ComprehensiveArrearsL12M	Count of arrears over past 12 months Total number of account arrears in the last 12 months	0	10254	85.0	10	f	NA	1	0
ComprehensiveArrearsL24M	Count of arrears over past 24 months Total number of account arrears in the last 24 months	0	10254	85.0	10	f	NA	1	0
ComprehensiveWorstPaymentStatusCurrentMonth	Optional Centrix recommendation The worst payment status reported in either month of observation or the previous month. If there is no payment status data available for either the current or previous month (i.e., customer has no open accounts), then a blank value will be returned. Refer: Comprehensive Payment Status Table	0	10254	85.0	10	f	NA	1	0
ComprehensiveWorstPaymentStatusL3M	Worst arrears cycle in past 3 months Comprehensive worst payment status in last 3 months across all accounts. Refer: Comprehensive Payment Status Table	0	10254	85.0	10	f	NA	1	0
ComprehensiveWorstPaymentStatusL6M	Worst arrears cycle in past 6 months Comprehensive worst payment status in last 6 months across all accounts.	0	10254	85.0	10	f	NA	1	0
ComprehensiveActiveAL	Count of accounts per product type Total number of active Auto Loan accounts.	0	10254	85.0	10	f	NA	1	0
ComprehensiveActiveCA	Count of accounts per product type Total number of active Charge Card accounts.	0	10254	85.0	10	f	NA	1	0
ComprehensiveActiveCC	Count of accounts per product type Total number of active Credit Card accounts.	0	10254	85.0	10	f	NA	1	0
ComprehensiveActiveOD	Count of accounts per product type Total number of active Overdraft accounts.	0	10254	85.0	10	f	NA	1	0
ComprehensiveActiveOther	Count of accounts per product type Total number of active Other accounts.	1	10254	85.0	10	f	NA	1	0
ComprehensiveActivePL	Count of accounts per product type Total number of active Personal Loan accounts.	0	10254	85.0	10	f	NA	1	0
ComprehensiveActiveR	Count of accounts per product type Total number of active Equipment Hire or Rental accounts.	1	10254	85.0	10	f	NA	1	0
ComprehensiveActiveRM	Count of accounts per product type Total number of active Mortgage accounts.	0	10254	85.0	10	f	NA	1	0
ComprehensiveActiveTC	Count of accounts per product type Total number of active Telecommunications Services accounts.	0	10254	85.0	10	f	NA	1	0
ComprehensiveActiveUA	Count of accounts per product type Total number of active Utilities (electric / water / gas provider) accounts.	0	10254	85.0	10	f	NA	1	0
ComprehensiveClosedAL	Count of accounts per product type Total number of closed Auto Loan accounts.	0	10254	85.0	10	f	NA	1	0

What would you like to predict?

is_bad



Start

Modeling Mode: **Autopilot** ▾

Feature list: Informative Features

Optimization Metric: LogLoss



Time-Aware Modeling

DataRobot has detected 1 time feature in your data. Would you like to use time series modeling or out-of-time validation?

☰ Set up time-aware modeling

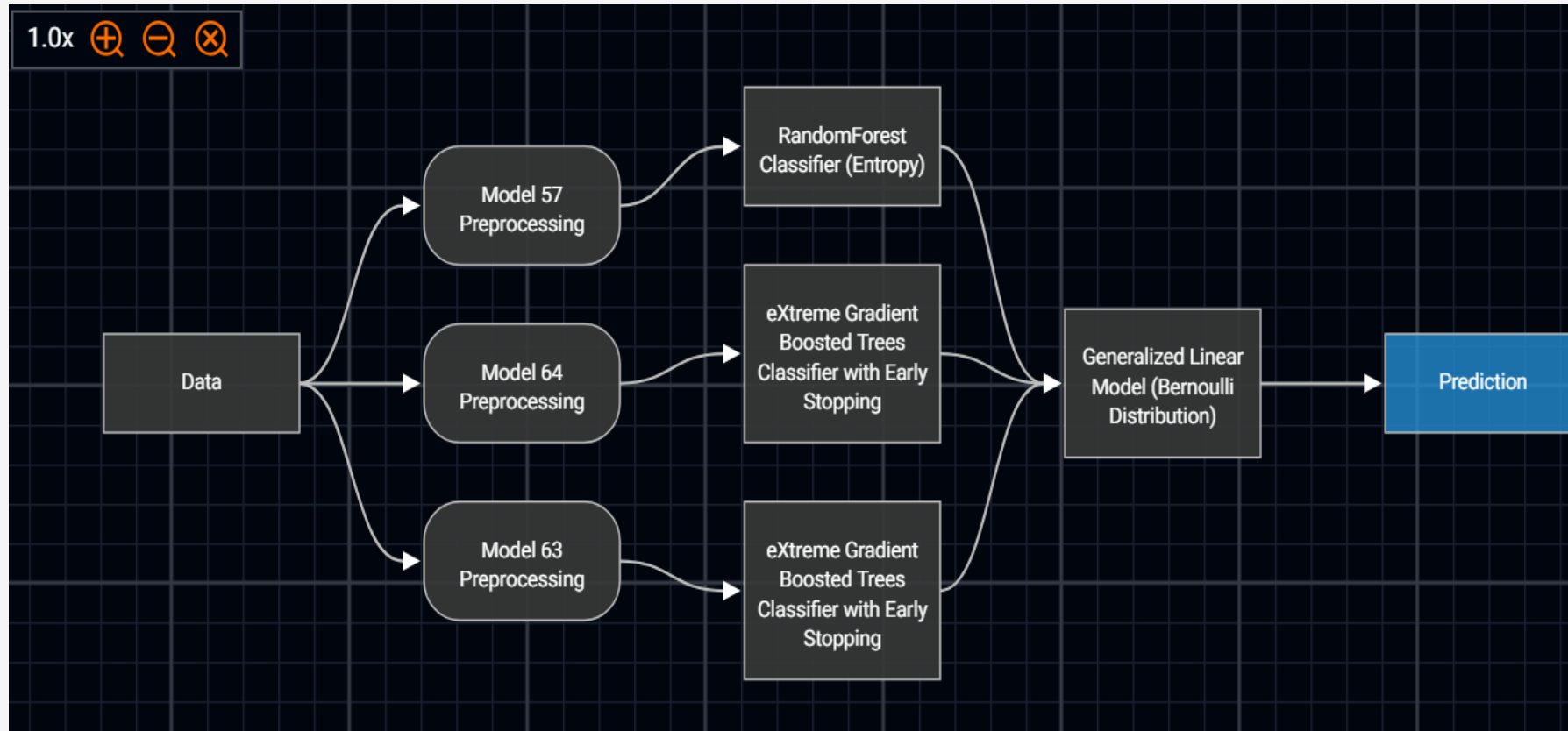
⚙ Show Advanced Options

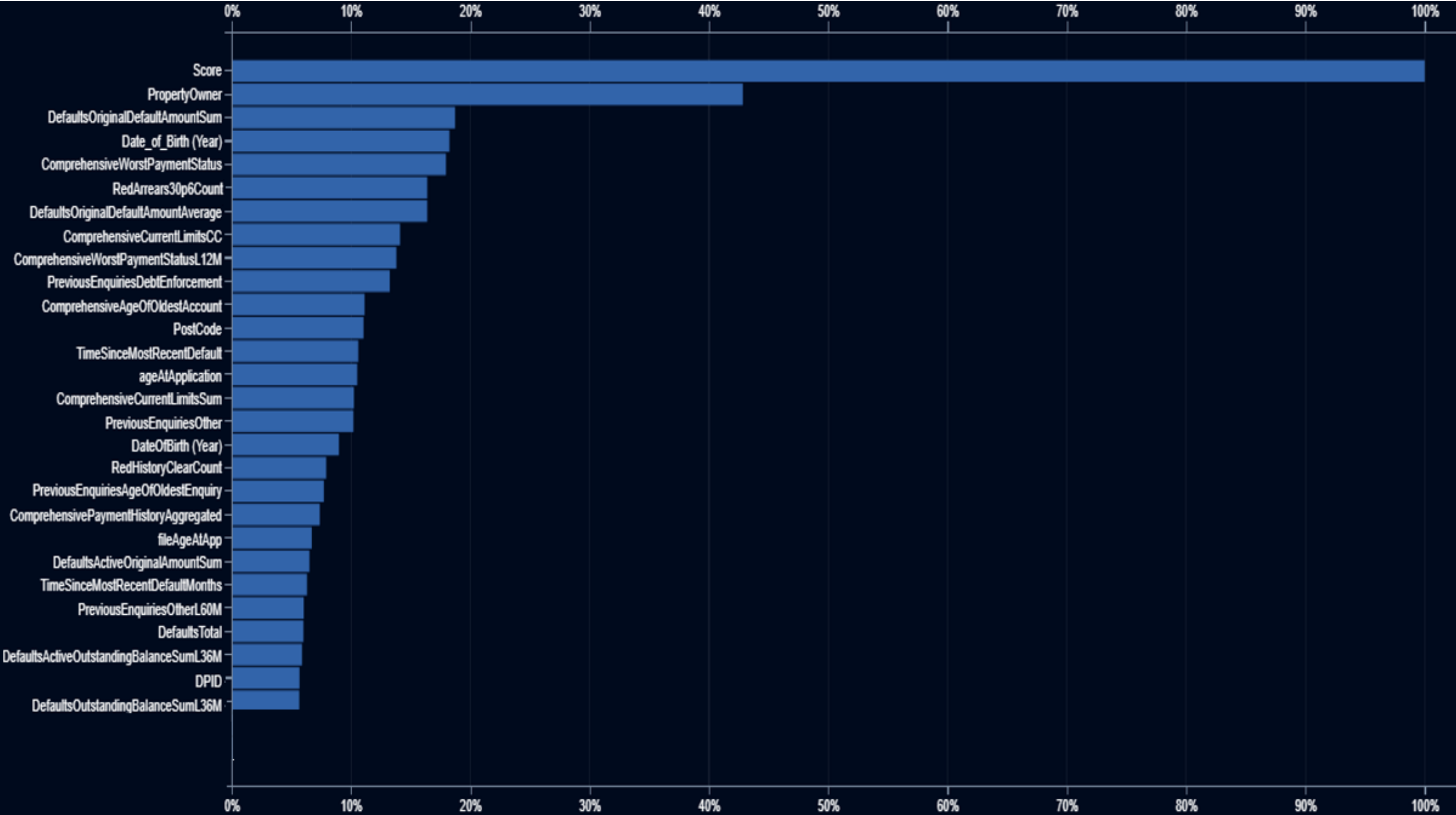
Modelling (Classification / Predictive)

Menu Q Search + Add New Model			Metric AUC ▼	
Model Name & Description	Feature List & Sample Size	Validation	Cross Validation	
GLM Blender <small>Prediction API Enabled</small> M102 M64+57+63	Informative Features 64.0 % +	0.8765	0.8663	
AVG Blender M99 M64+57+63	Informative Features 64.0 % +	0.8765	0.8663	
ENET Blender M101 M59+64+61+57+58+...	Informative Features 64.0 % +	0.8782	0.8662	
Advanced GLM Blender M103 M59+64+61+57+58+...	Informative Features 64.0 % +	0.8766	0.8661	
Advanced AVG Blender M100 M59+64+61+57+58+...	Informative Features 64.0 % +	0.8780	0.8656	
eXtreme Gradient Boosted Trees Classifier with Early Stopping <small>Tree-based Algorithm Preprocessing v1</small>	Informative Features 64.0 % +	0.8740	0.8647	

- Dependent on data hygiene, we can generate thousands of models and provide the more capable from these, for entire industries down to specific organisations in minimal time.
- Can also create mixture/hybrid models which can compensate for the strengths and weaknesses of specific machine learning algorithms.
- Can further tweak these algorithms and models to improve performance

Modelling (Hybrid Modelling)





XGBoost eXtreme Gradient Boosted Trees Classifier with Early Stopping and Unsupervised Learning Features

Tree-based Algorithm Preprocessing v22 with Unsupervised Learning Features

Informative Features 

80.0% 

0.2907 *

0.2994 *

0


M107 BP67

 **RECOMMENDED FOR DEPLOYMENT**

Evaluate Understand Describe Predict


Feature Impact Feature Effects Prediction Explanations Word Cloud

Feature Effects

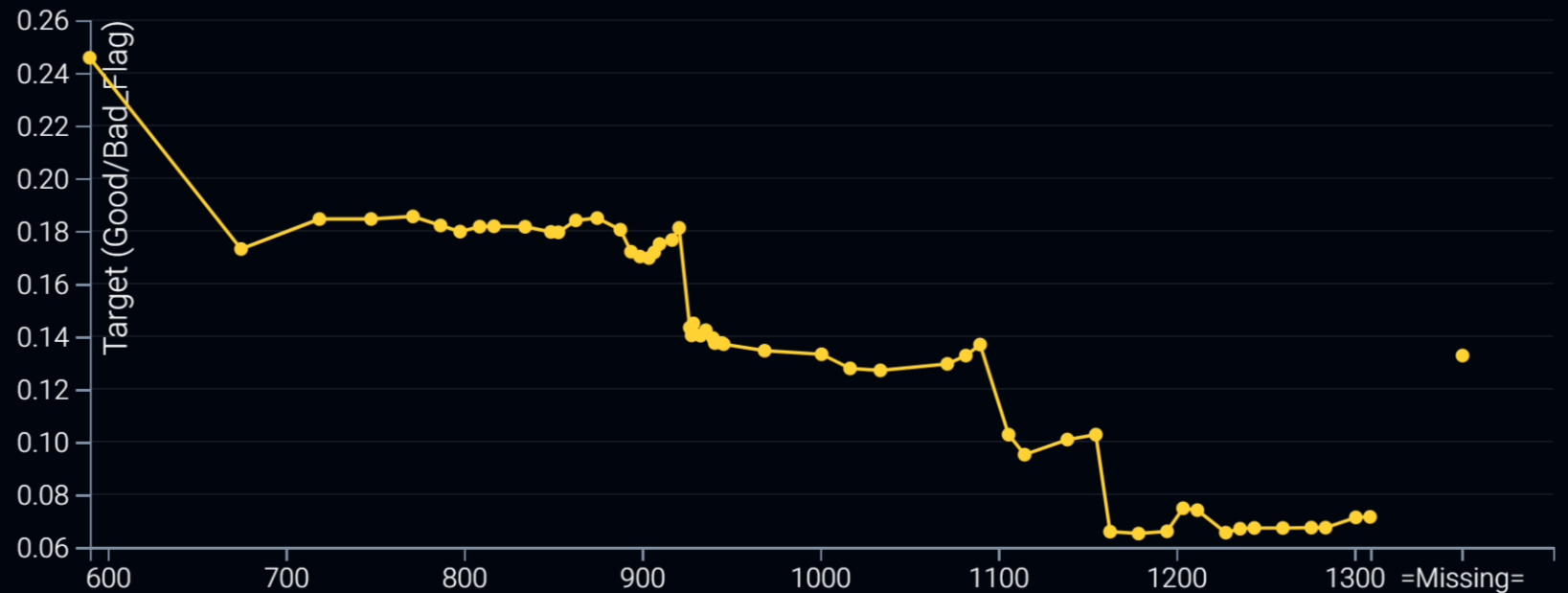
Features sorted by Impact 



Partial Dependence Predicted Actual



Search for features 

Obs1_CreditScore	100%
Obs1_ComprehensiveAgeOfOldestAccount	66%
YearOfBirth	59%
Obs1_TimeSinceMostRecentEnquiry	44%
Total_Monthly_Income	37%
Obs1_SC_ComprehensiveCurrentLimitsCC_V	37%
Obs1_ComprehensiveWorstPaymentStatusL1...	31%
Obs1_PreviousEnquiriesTotalL3M	29%
Obs1_PreviousEnquiriesTotalL36M	28%



XG Boost eXtreme Gradient Boosted Trees Classifier with Early Stopping and Unsupervised Learning Features

Tree-based Algorithm Preprocessing v22 with Unsupervised Learning Features

Informative Features 
80.0% 

0.2907 * 0.299


M107 BP67  **RECOMMENDED FOR DEPLOYMENT**

Evaluate **Understand** Describe Predict

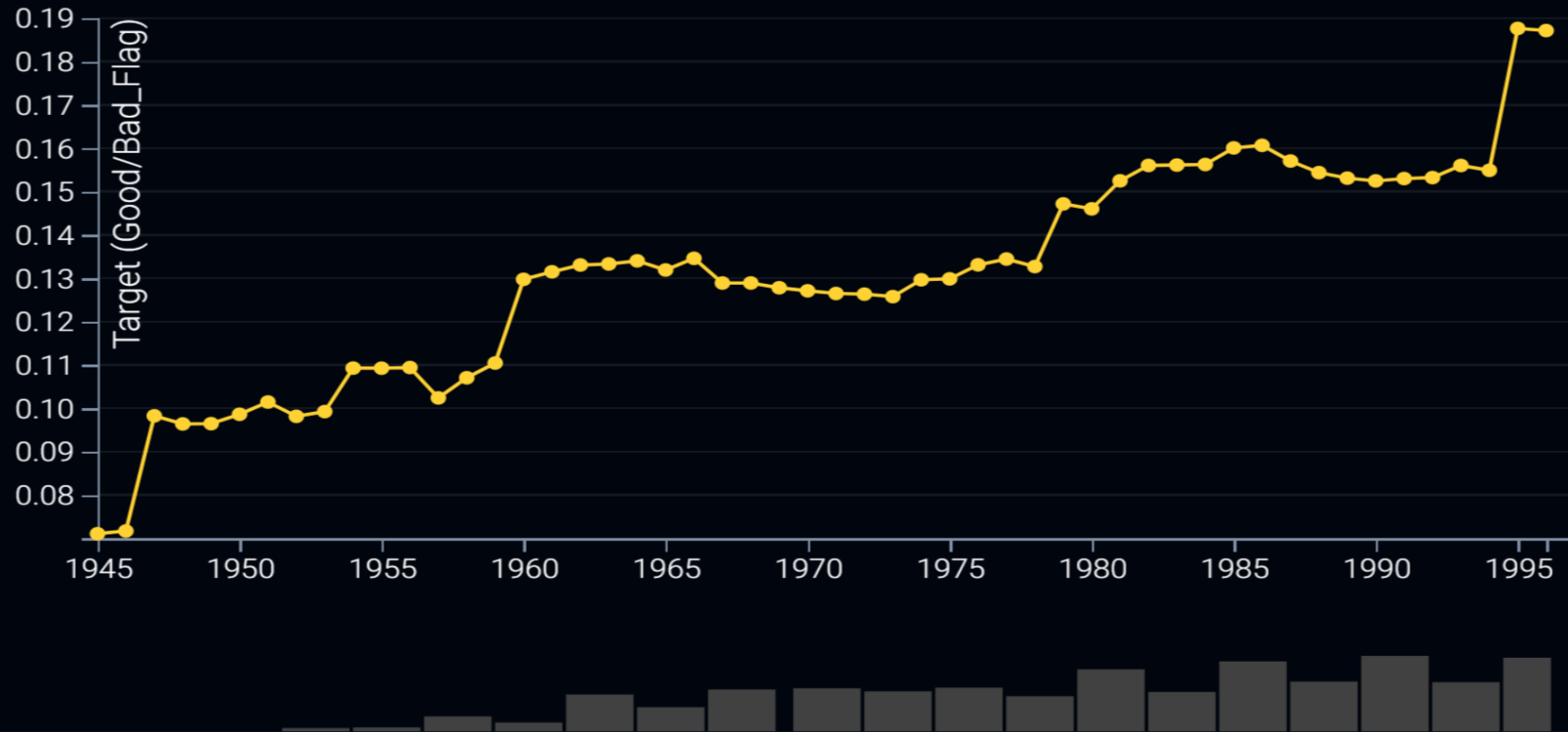
Feature Impact **Feature Effects** Prediction Explanations Word Cloud

Feature Effects

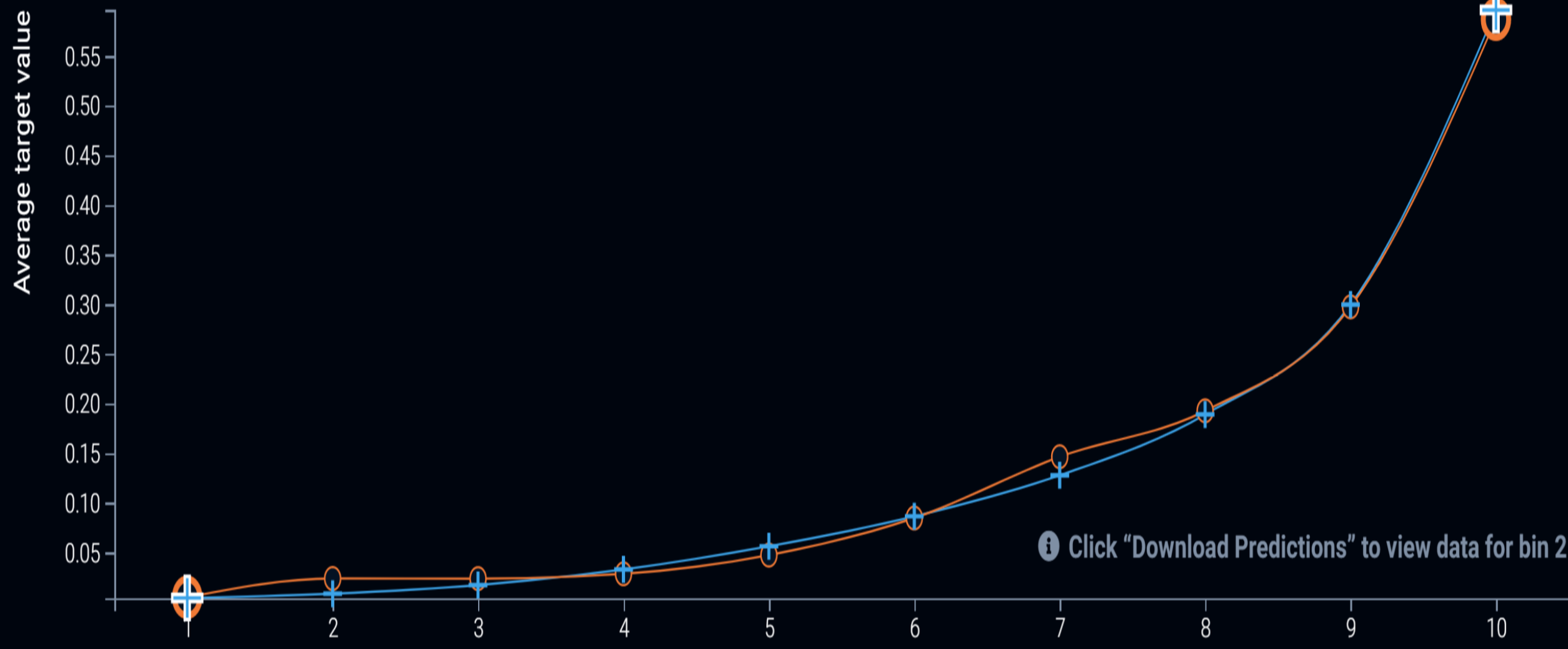
Features sorted by Impact   Partial Dependence Predicted Actual

Search for features 

Obs1_CreditScore	100%
Obs1_ComprehensiveAgeOfOldestAccount	66%
YearOfBirth	59%
Obs1_TimeSinceMostRecentEnquiry	44%
Total_Monthly_Income	37%
Obs1_SC_ComprehensiveCurrentLimitsCC_V	37%
Obs1_ComprehensiveWorstPaymentStatusL1...	31%
Obs1_PreviousEnquiriesTotalL3M	29%
Obs1_PreviousEnquiriesTotalL36M	28%



+ Predicted ○ Actual



Click "Download Predictions" to view data for bin 2

Natural Language Machine Learning



**AUTOMATED FINANCIAL & RISK
INSIGHTS**

Evidence-based Approach for A Better Outcome

Data input

USD'000	2016	2015	%Chg
Sales	44,163.64	45,355.24	-2.6%
Profit Before Tax	1,134.30	2,234.65	-49.2%
Profit After Tax	1,184.90	1,836.84	-35.5%
Total Asset	29,527.02	28,948.69	2.0%
Total Liabilities	12,972.31	13,430.16	-3.4%
Current Liabilities	9,992.71	9,435.51	5.9%
Shareholder Fund	16,554.71	15,518.53	6.7%

Natural Language Machine Learning

Is the business growing?

Sales growth

-2.63%

14.13%



Peer comparison:	Below Avg.	In line	Above Avg.
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Latest Year	Previous Year	
Profit Margin Growth	-1.37%	0.94%	↓
Working Capital Turnover	1.24	1.45	↓
Receivable Growth	-2.34%	24.39%	↑

Is the business reliant on debt to funds its sales growth?

Debt - to - Sales

29.38%

58.36%



Peer comparison:	Below Avg.	In line	Above Avg.
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Latest Year	Previous Year	
Debt Growth	-3.4%	35.2%	↑
Sales Growth	-2.6%	9.8%	↓
Interest Expenses Growth	-83.4%	217.0%	↑

Are costs moving faster than sales?

Total Costs / Sales change YoY

2.36%

-0.57%



Is the business taking higher risk?

Debt to Equity

78.36%

85.40%



Peer comparison:	Below Avg.	In line	Above Avg.
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Natural Language Machine Learning

ROADMAP STATEMENT		ACTION PLAN	CHECK LIST	TARGET DATE
BUSINESS PERFORMANCE REPORT (BPR)	The cost of generating additional revenue was almost neutral compared to the previous year.	<ul style="list-style-type: none"> Examine possibilities of structural drivers within the industry and company that impact the revenue-cost structure of firm. Determine the cost of marketing and sales operations over the years relative to sales growth. Obtain the supplier listings and analyse the relationships and credit costs associated with each transaction. Evaluate across the value chain of processing and delivering goods/services within the firm. 		
SHAREHOLDER VALUE REPORT (SVR)	There was an average profitability growth experienced by the firm, compared to the previous year.	<ul style="list-style-type: none"> Determine whether the main reason for profits growth was due to margins/sales management or leverage. Ascertain the level of risks undertaken by the firm to generate the current/recent profit growth. Evaluate the sustainability of the performance in subsequent years as this may be a one-off streak. Examine whether there are single major client or large contract that resulted in the strong performance. Ascertain whether there are any possible mergers and acquisitions or non-organic growth to maintain position. 		
		<ul style="list-style-type: none"> Evaluate liability trends in past years and compare against revenue. 		

