Power BI Data Scientist & Artificial Intelligence Solutions

Microsoft Reactor, London UK

Monday 11th February 2019 18:00 – 20:00

Host: David Moss : Microsoft MVP

Presenters : Oliver O'Shea, Gaby May Lagunes & Samit Saini

Sponsors: Microsoft Reactor, Isosceles Finance

MS Reactor in house Rules

- Switch to Reactor Slides

ai bi
powerBI.ai

Agenda

- 17:30 – 18:00 Networking with sandwich and drinks on arrival.
- 18:00 Introductions to the event agenda etc
- 18:15 David Moss MS powerBI AI ecosystem; Azure ML & Cognitive Services with Power BI & Dataflows
- 18:30 Gaby; Python & Power BI
- 18:50 Oliver; Power BI & R
- 19:10 Samit; Power Apps @ Heathrow airport
- 19:30 Saurabh; alphaa.ai voice ai with Power BI
- 19:50 David Moss; powerBI.ai ninja Power BI training course application process.
- 20:00 Q&A
- 20:00 -20:30 networking

Presenters

Samit Saini
Power Apps

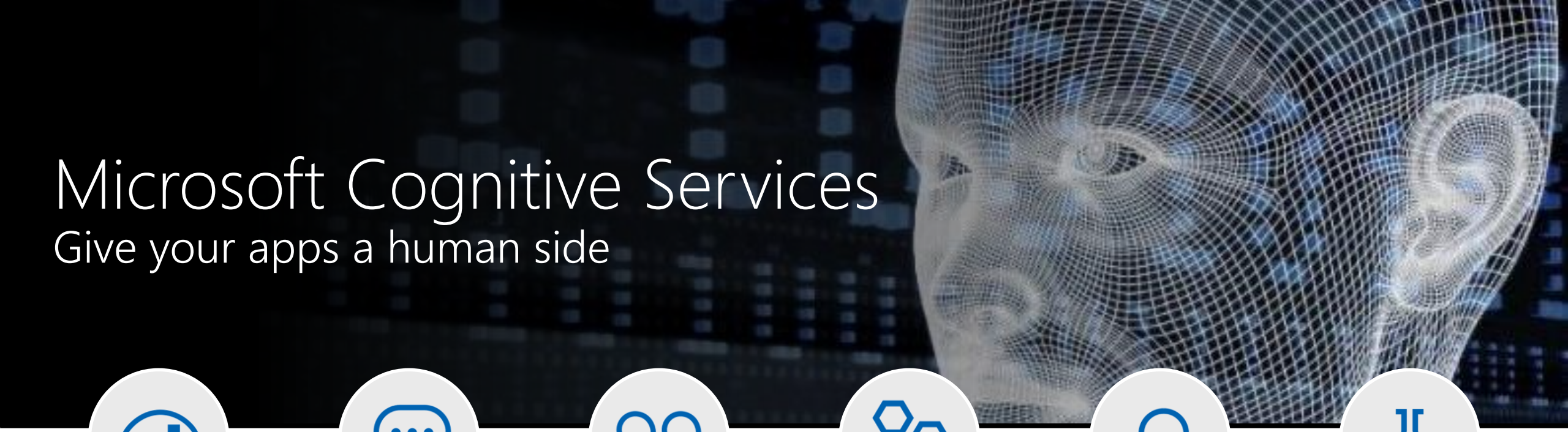
Oliver O'Shea
Power BI & R

Gaby May Lagunas
Power BI & Python

AI in PowerBI

- Dashboard Q&A NLQ natural language query & Quick Insights.
- Reports right click a visual use analyse for insights or Ask Q&A in a report.
- Coming soon ‘ask a follow up question’ is cool
- R & Python for Machine learning
- Any more…..?

- 4 new Power BI AI features
- Cognitive Services in Entity dataflows (Premium)
- Seamless Integration of Azure Machine Learning Models
- Create Machine Learning models to enhance an entity. (AutoML)
- Key Driver visualizations



Microsoft Cognitive Services

Give your apps a human side

Vision

From faces to feelings, allow your apps to understand images and video

Speech

Hear and speak to your users by filtering noise, identifying speakers, and understanding intent

Language

Process text and learn how to recognize what users want

Knowledge

Tap into rich knowledge amassed from the web, academia, or your own data

Search

Access billions of web pages, images, videos, and news with the power of Bing APIs

Labs

An early look at emerging Cognitive Services technologies: discover, try and give feedback on new technologies before general availability

Use AI to solve business problems

Vision

Image-processing algorithms to smartly identify, caption, index, and moderate your pictures and videos.

Speech

Convert spoken audio into text, use voice for verification, or add speaker recognition to your app.

Knowledge

Map complex information and data in order to solve tasks such as intelligent recommendations and semantic search.

Search

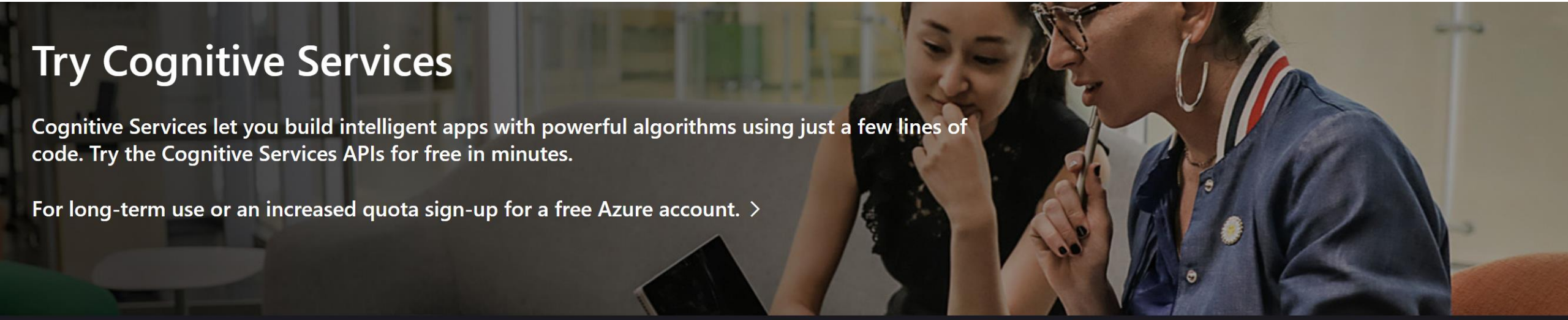
Add Bing Search APIs to your apps and harness the ability to comb billions of webpages, images, videos, and news with a single API call.

Language

Allow your apps to process natural language with pre-built scripts, evaluate sentiment and learn how to recognize what users want.

"Because the Cognitive Services APIs harness the power of machine learning, we were able to bring advanced intelligence into our product without the need to have a team of data scientists on hand."

Aaron Edell, Chief Product Owner, GrayMeta



Try Cognitive Services

Cognitive Services let you build intelligent apps with powerful algorithms using just a few lines of code. Try the Cognitive Services APIs for free in minutes.

For long-term use or an increased quota sign-up for a free Azure account. >

Explore Cognitive Services: Directory Pricing Documentation Log in

1 Select your API

2 Get an API key

3 Start using the API

Vision APIs | Speech APIs | Language APIs | Search APIs

Bing Spell Check API v7

Help users correct spelling errors, recognize the difference among names, brand names, and slang, as well as understand homophones as they're typing.

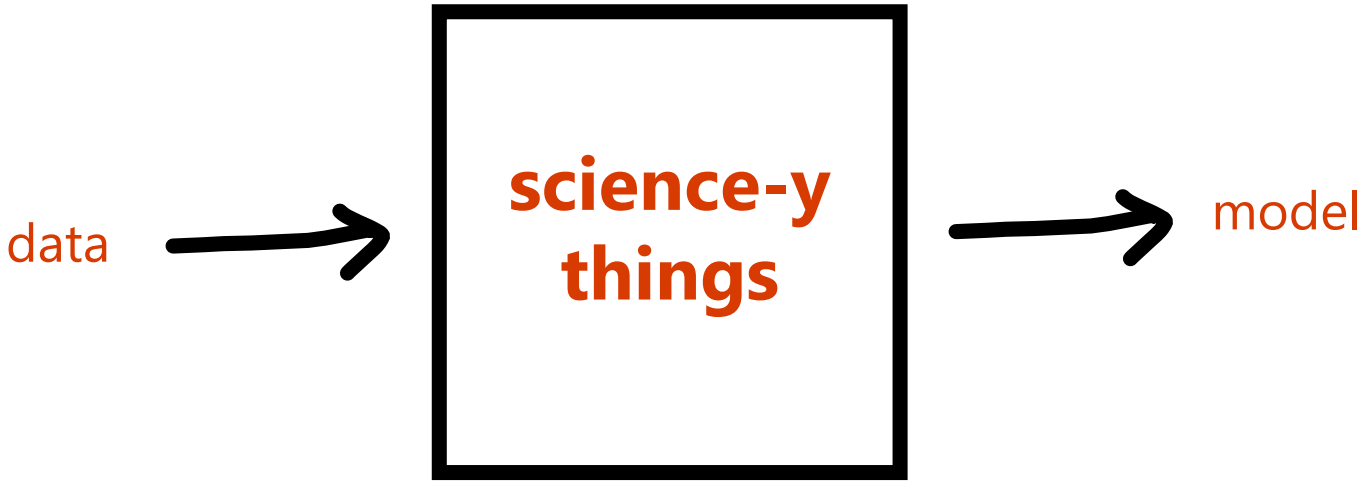
1,000 transactions per month, up to 1 per second. Trial keys expire after a 7 day period.

Get API Key >

Azure Machine Learning Service or Studio

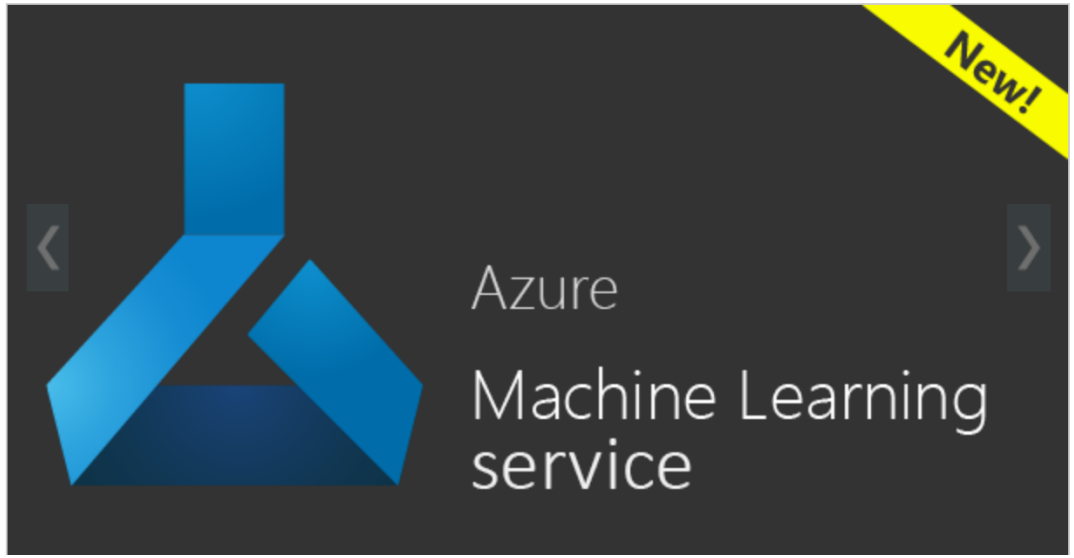
- AML Service (replaces old Workbench) for developers.
- Portal https://studio.azureml.net/ sign in get free space
- AML Studio no code easy drag & drop
- AML Studio show experiment with dataset & where to create model.
- Deploy model as a web service then consume in PBI with R & Python

Machine Learning …



Microsoft Azure Machine Learning Studio

Sign In



Welcome to Azure Machine Learning

Try it for free

No Azure subscription? No credit card? No problem! Choose anonymous Guest Access, or sign in with your work or school account, or a Microsoft account.

Sign In

Not an Azure ML user?
Sign up here

Microsoft Azure Machine Learning Studio

David Moss-Free-Workspa...

PROJECTS
EXPERIMENTS
WEB SERVICES
NOTEBOOKS
DATASETS
TRAINED MODELS
SETTINGS

experiments

MY EXPERIMENTS SAMPLES

NAME	AUTHOR	STATUS	LAST EDITED	PROJECT

No experiments found

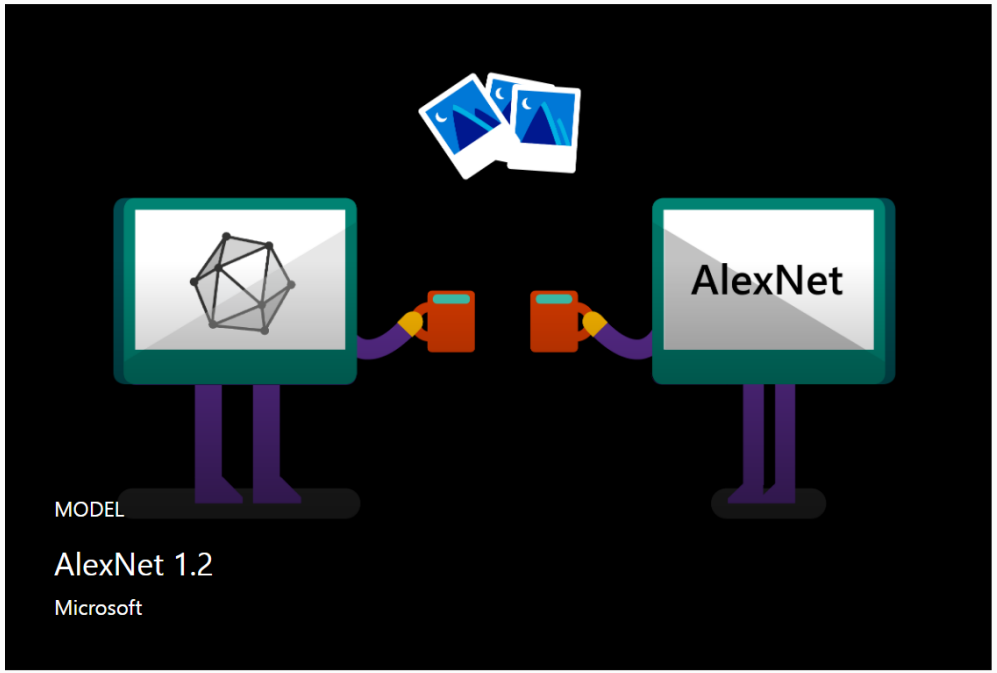
0 items selected

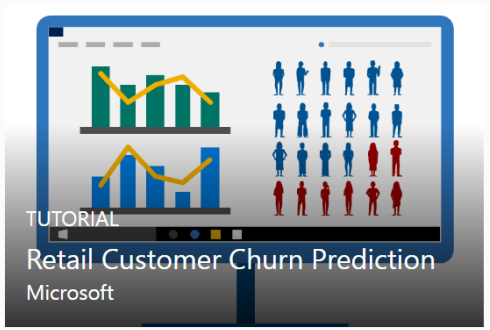
Azure AI Gallery

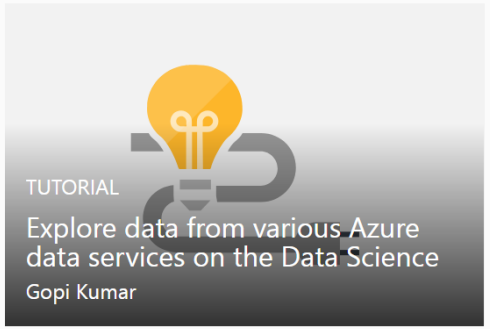
Sign in

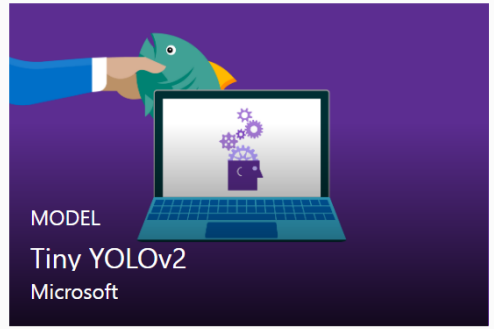
Browse all | Industries | Solutions | Projects | Models | Experiments | Custom Modules | More

Azure AI Gallery enables our growing community of developers and data scientists to share their analytics solutions. Learn how to contribute.



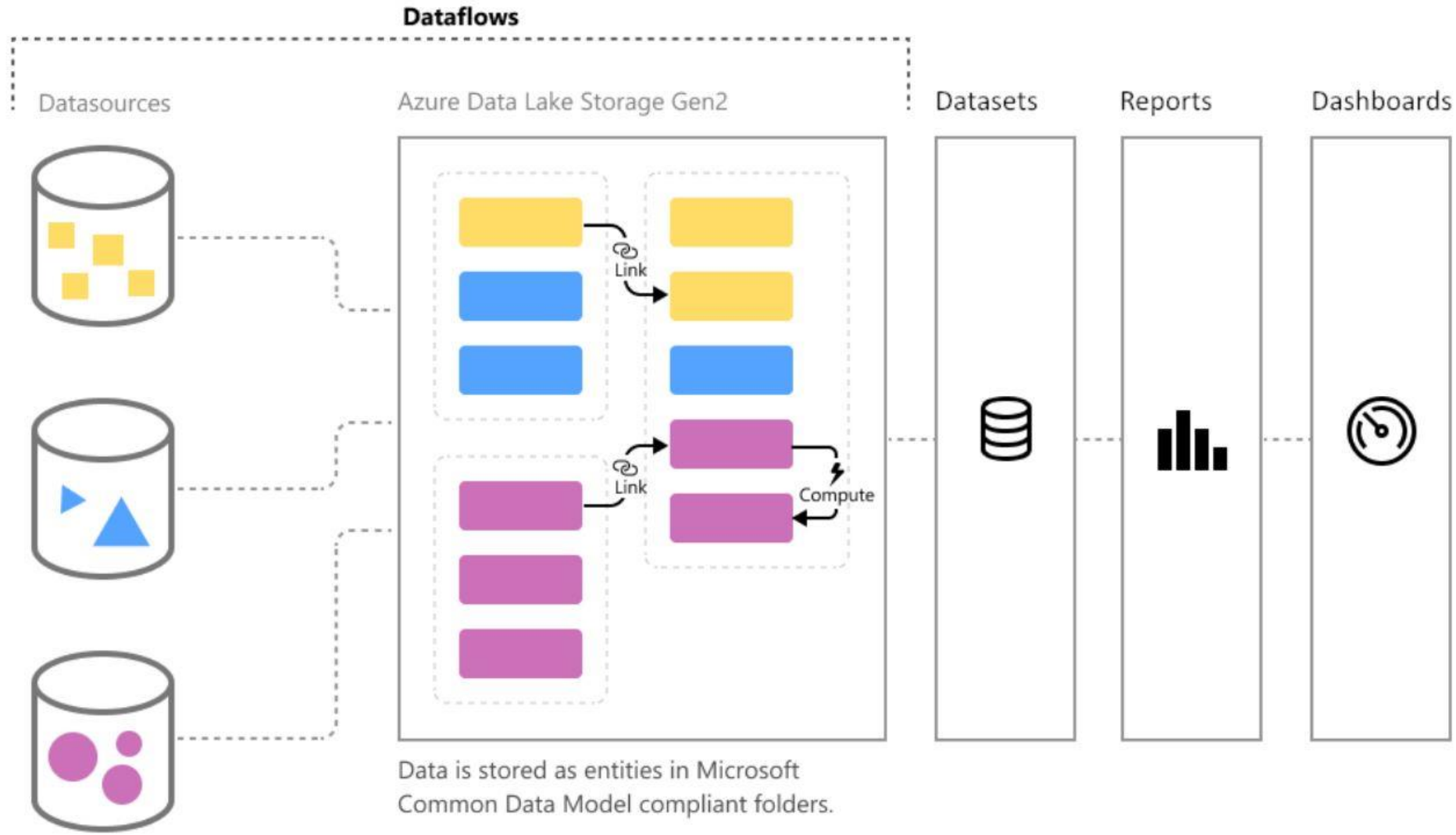






David Moss: Power BI new AI features

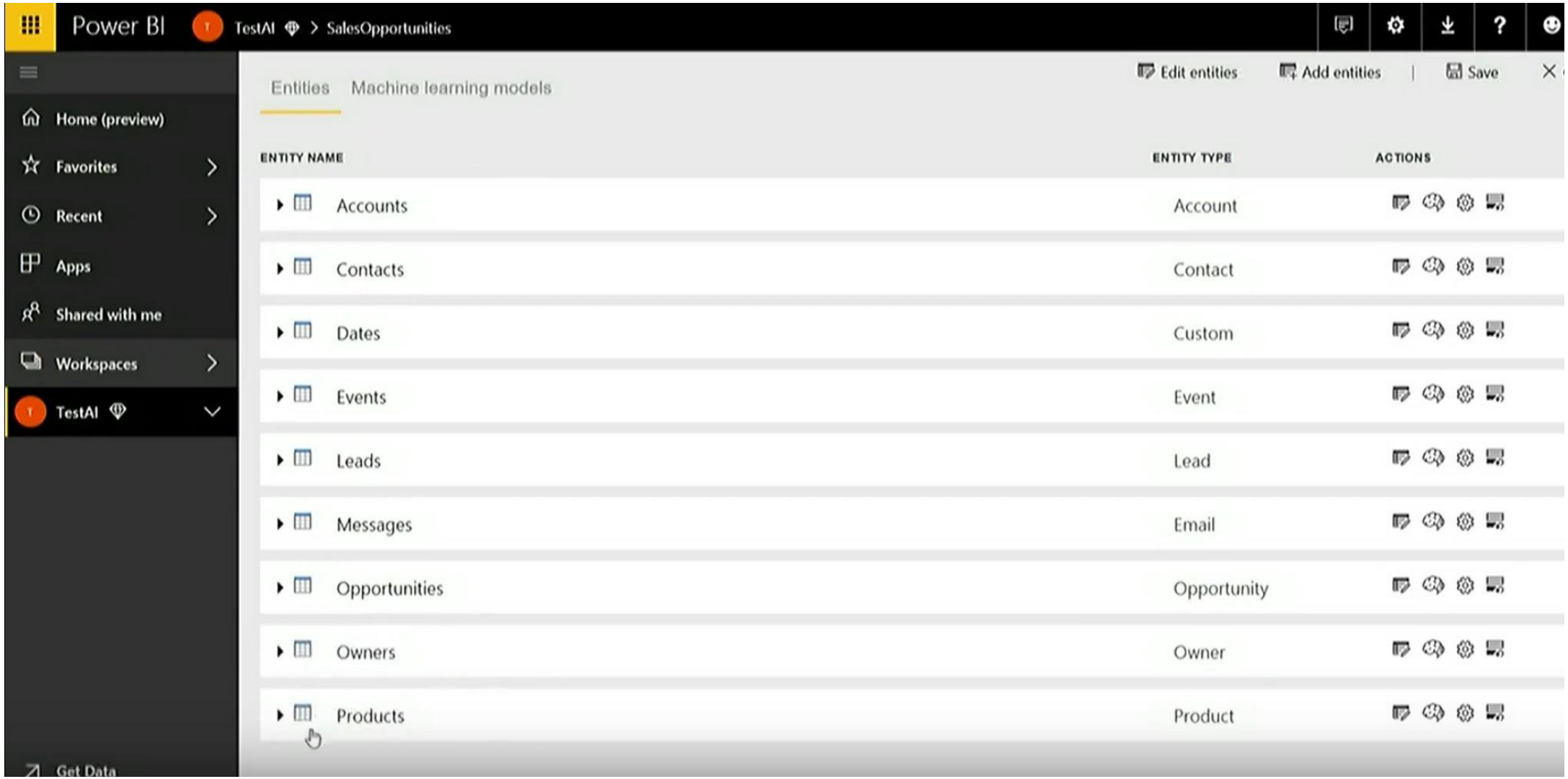
- Dataflow PQE workspace; enterprise solution like datamodel.
- Entities PQ in cloud use AI features by Invoke function.
- Premium Cognitive Services 4 available.
- Non premium AML models exposed for consumption.
- Entities enhance data table with AutoML AI features.
- Then use dataflow in a Power BI desktop report.


Dataflows
Datasources
Azure Data Lake Storage Gen2
Datasets
Reports
Dashboards
Link
Link
Compute
Data is stored as entities in Microsoft
Common Data Model compliant folders.

Dataflow ETL ‘AI Features’: Cognitive Services

- During ETL select ‘AI features’ to show 4 Cognitive Services
- language detection
- image detection
- key phrase extraction
- sentiment scoring

- And any AML models you have access built in R & python in AML studio or AML Services


Power BI
TestAI
SalesOpportunities
Home (preview)
Favorites
Recent
Apps
Shared with me
Workspaces
TestAI
Get Data
Entities
Machine learning models
Edit entities
Add entities
Save
ENTITY NAME
ENTITY TYPE
ACTIONS
Accounts
Account
Contacts
Contact
Dates
Custom
Events
Event
Leads
Lead
Messages
Email
Opportunities
Opportunity
Owners
Owner
Products
Product

New to machine learning models? Here's what you'll be doing:

1. Create and train your model

2. Improve it

3. Apply it

Choose a model type

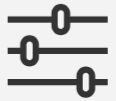
We'll help you pick the best model to achieve your business goals.

Select training data

Select your base data and related inputs to train your model.

Train your model

The model will train on your data and report on its performance.



Iterate and retrain

Evaluate, customize and retrain your model until it's optimized

Apply the model

Apply your model to future data for predictive insights.

Get started

Choose a model type

Classification

Binary Prediction

Determine the likelihood of a specific outcome being achieved.

General Classification

Identify the category or class an entity belongs to.

Regression

Regression

Estimate a numeric value

Forecasting

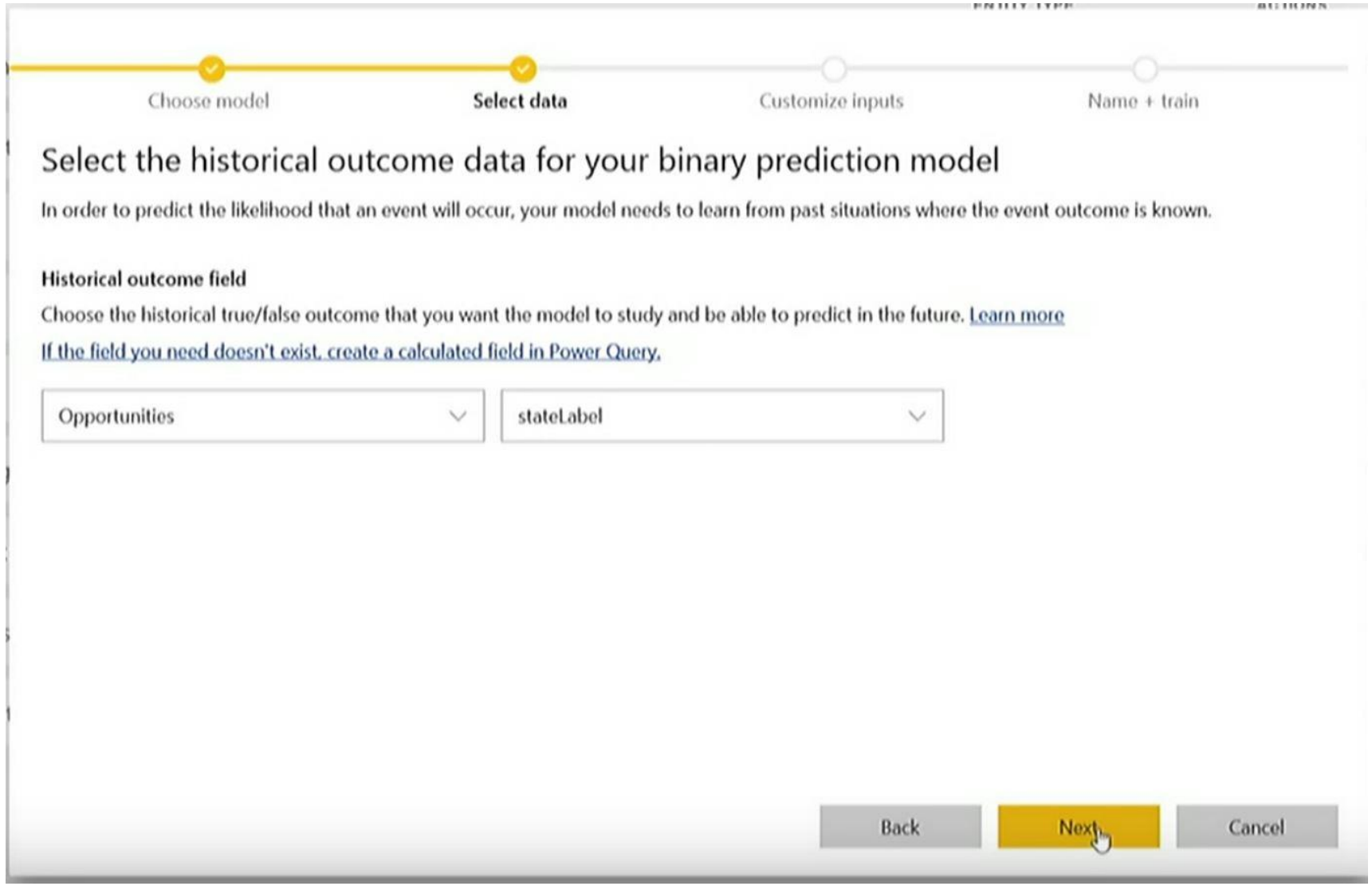
Forecasting

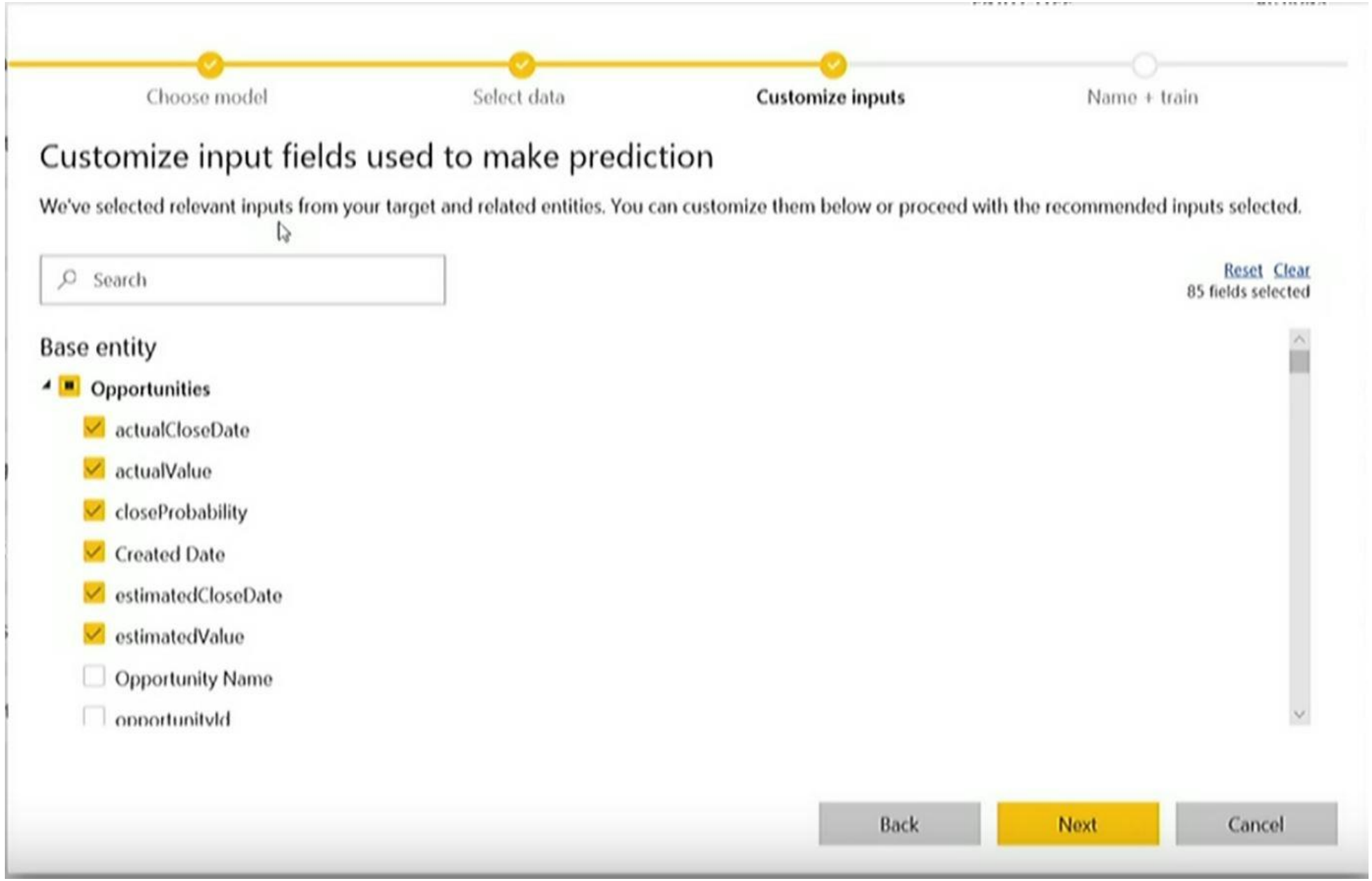
Estimate values and trends based on historical data.

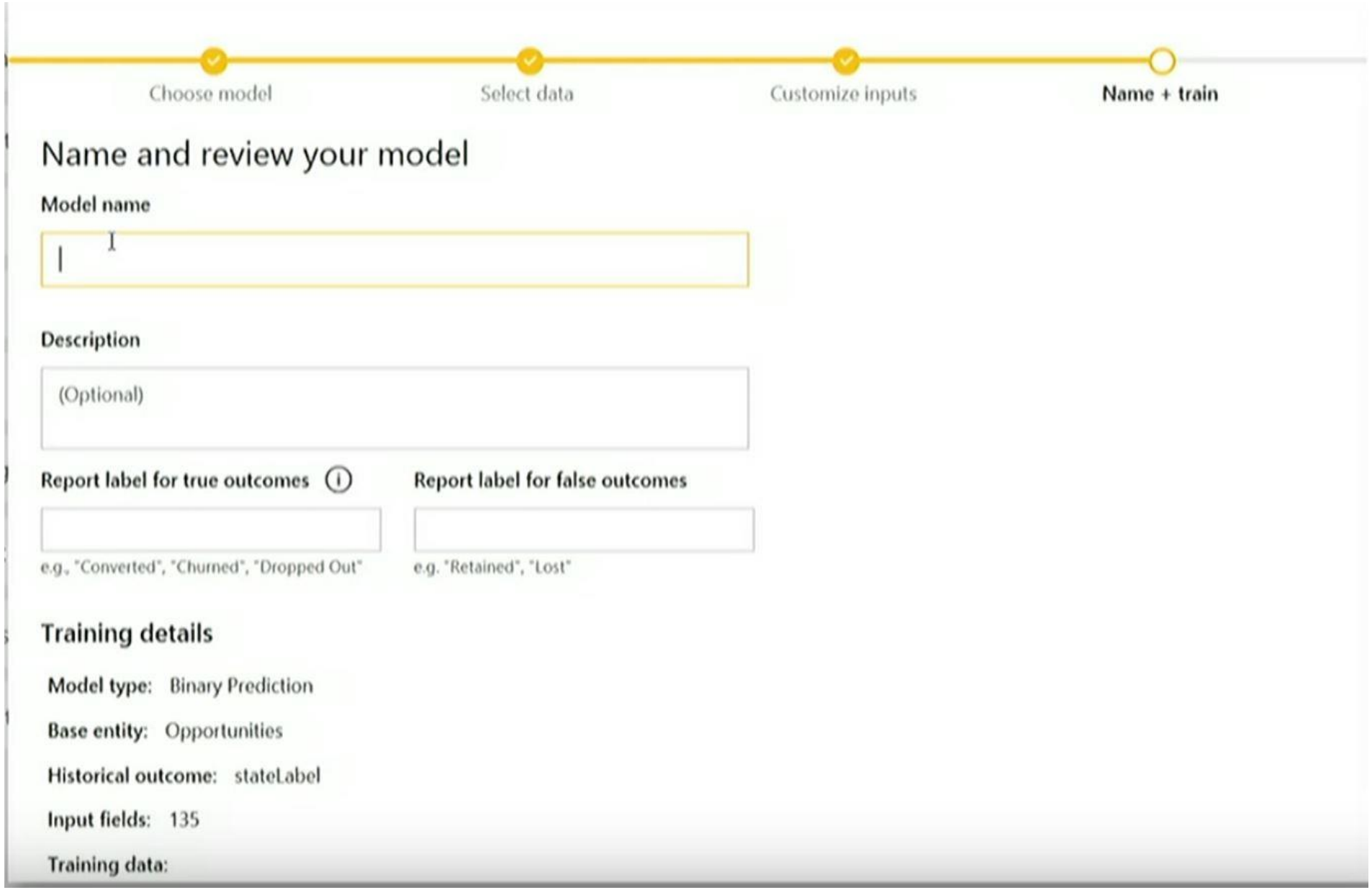
New to machine learning models?

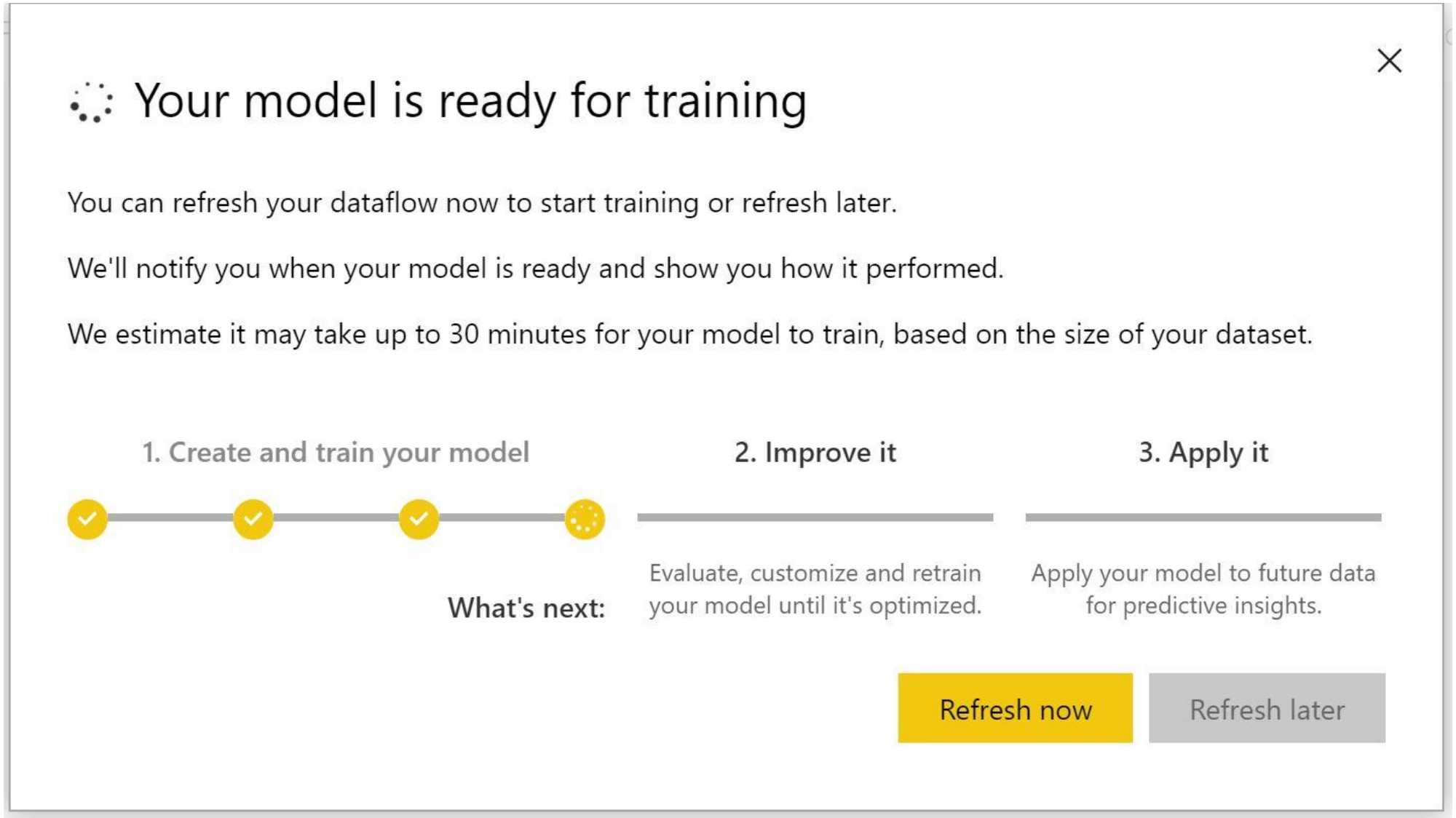
Next

Cancel


Choose model
Select data
Customize inputs
Name + train
Select the historical outcome data for your binary prediction model
In order to predict the likelihood that an event will occur, your model needs to learn from past situations where the event outcome is known.
Historical outcome field
Choose the historical true/false outcome that you want the model to study and be able to predict in the future. Learn more
If the field you need doesn't exist, create a calculated field in Power Query.
Opportunities
stateLabel
Back
Next
Cancel


Choose model
Select data
Customize inputs
Name + train
Customize input fields used to make prediction
We've selected relevant inputs from your target and related entities. You can customize them below or proceed with the recommended inputs selected.
Search
Reset Clear
85 fields selected
Base entity
Opportunities
actualCloseDate
actualValue
closeProbability
Created Date
estimatedCloseDate
estimatedValue
Opportunity Name
Back
Next
Cancel


Choose model
Select data
Customize inputs
Name + train
Name and review your model
Model name
Description
(Optional)
Report label for true outcomes
Report label for false outcomes
e.g., "Converted", "Churned", "Dropped Out"
e.g. "Retained", "Lost"
Training details
Model type: Binary Prediction
Base entity: Opportunities
Historical outcome: stateLabel
Input fields: 135
Training data:


Your model is ready for training
You can refresh your dataflow now to start training or refresh later.
We'll notify you when your model is ready and show you how it performed.
We estimate it may take up to 30 minutes for your model to train, based on the size of your dataset.
1. Create and train your model
2. Improve it
3. Apply it
What's next:
Evaluate, customize and retrain your model until it's optimized.
Apply your model to future data for predictive insights.
Refresh now
Refresh later

OpportunityScoring model accuracy preview

This report summarizes the accuracy of the binary prediction model and enables you to find an optimal threshold for defining your business outcome.

Apply model | Edit model

82%
Model Performance

Training summary data

7043 Total Data Provided	3738 Total Data Sampled
2990 Training Data	748 Validation Data

How the model was tested

The model predicted churned probabilities for a test set of 748 records and compared the predicted outcomes (based on the selected threshold) to the historical outcomes.

Analyze: **Win** | Loss

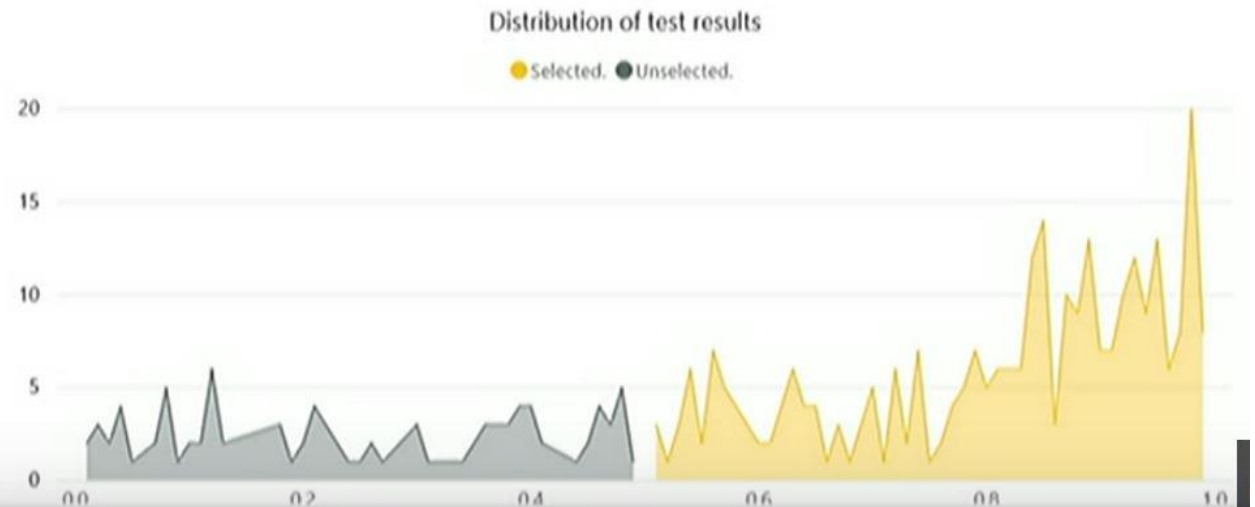
Optimize Win confidence threshold

Use the slider to analyze what portion of data will be valuable for you to predict as Win versus Loss

Confidence Threshold

0.00 **0.50**

Increase Threshold to ⇧ precision ⇩ recall



Validation Output

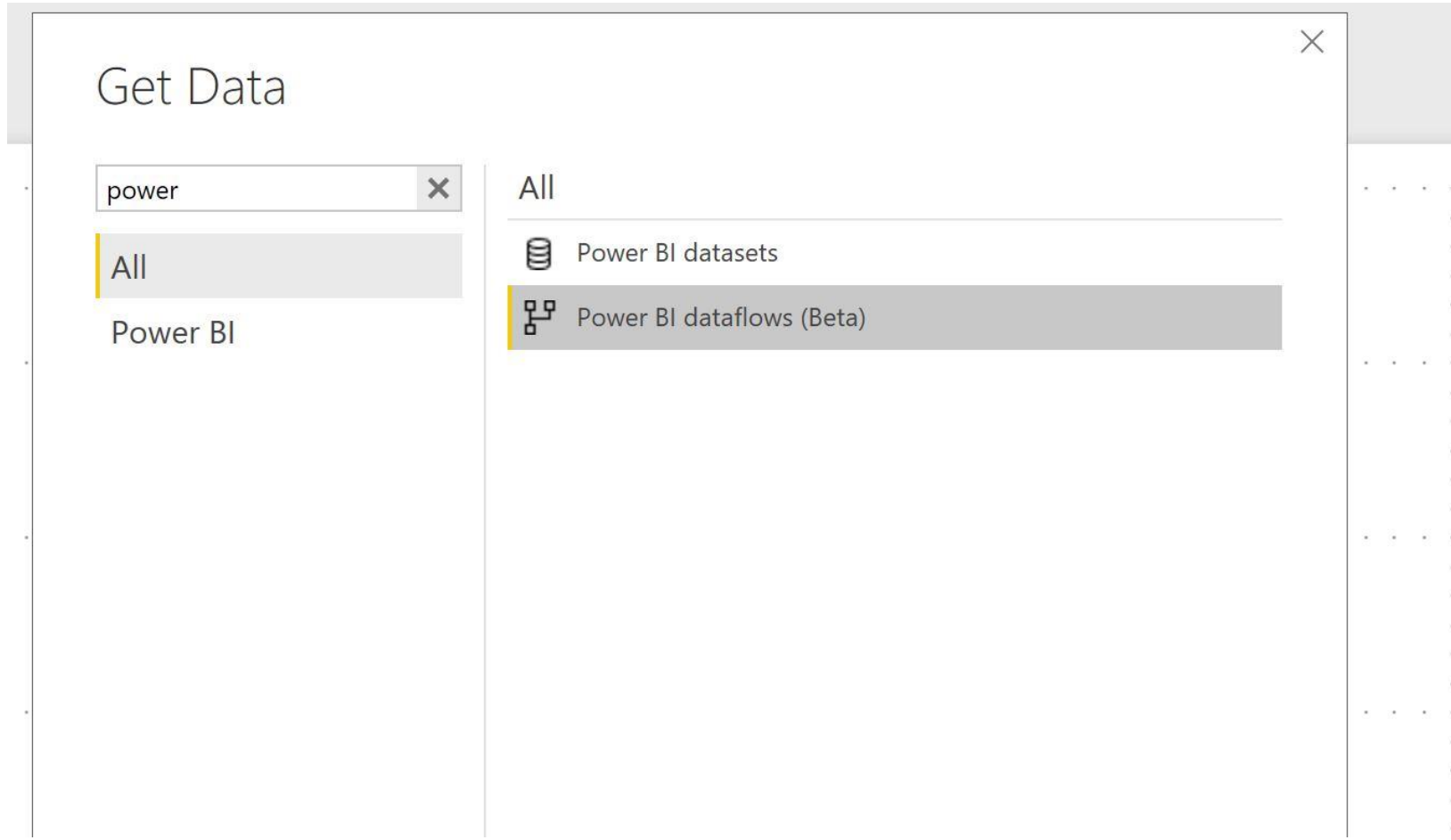
https://powerbi.microsoft.com/en-us/blog/power-bi-announces-new-ai-capabilities/

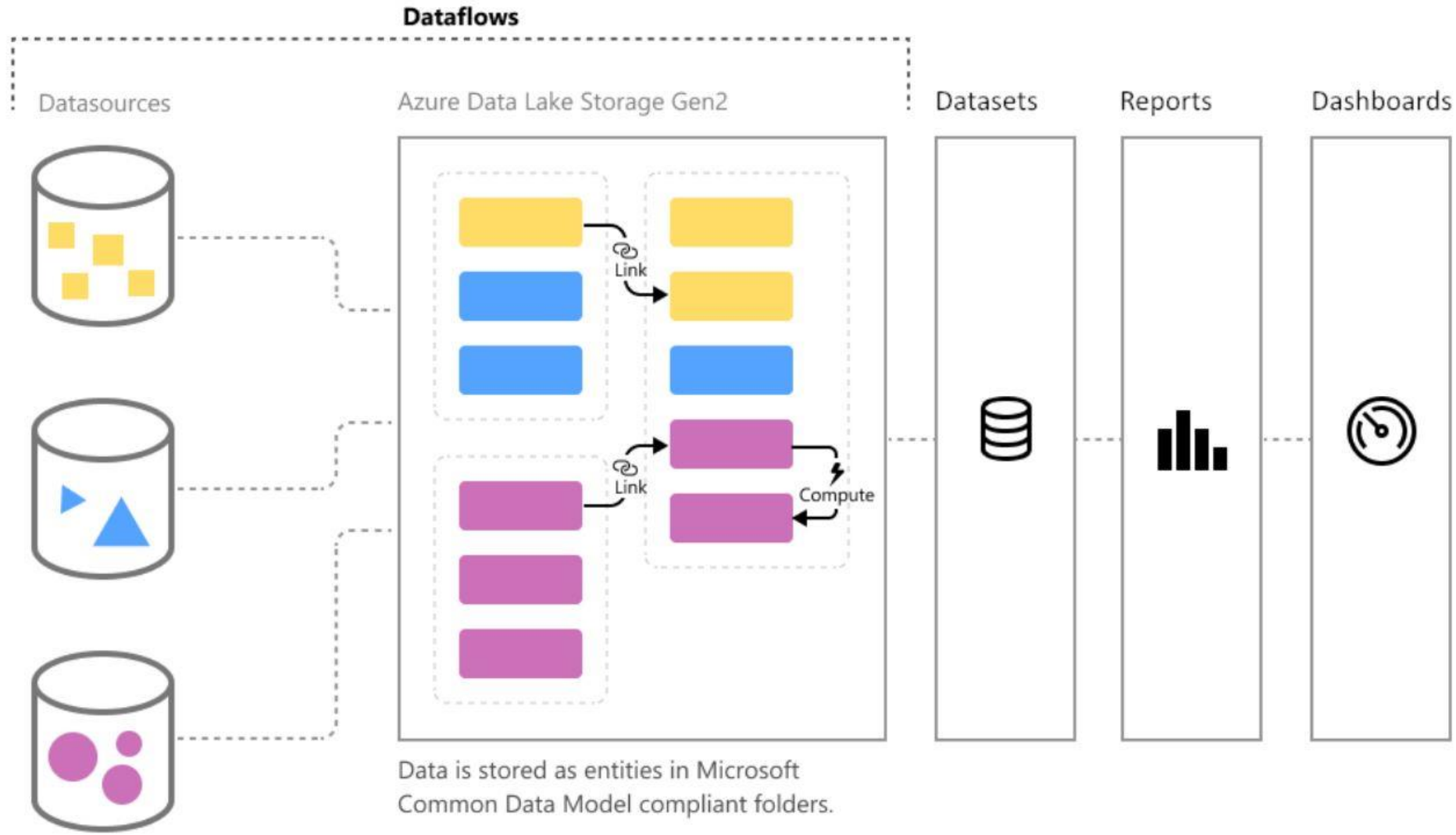
Sign up for the preview to try new AI capabilities in Power BI

Thank you for your interest in the Power BI AI Features Preview! We had an overwhelming response exceeding the capacity of this limited preview, and are unable to accept new access requests. These features will be available for a public preview by March 2019. So while we're sorry that we aren't able to accept new requests, it's only a short wait. Thanks again for your interest!

Create my own form

Powered by Microsoft Forms Privacy and Cookies


Get Data
power
All
Power BI
All
Power BI datasets
Power BI dataflows (Beta)


Dataflows
Datasources
Azure Data Lake Storage Gen2
Datasets
Reports
Dashboards
Link
Link
Compute
Data is stored as entities in Microsoft
Common Data Model compliant folders.

Power BI & Python: Gabriella May Lagunas

- Gabriela is a Software Developer at BBOXX, a global company fighting energy poverty through smart solar technologies.
- She holds two masters degrees from University College London: Experimental Physics and Engineering for International Development.
- She believes that real positive impact in any community can be achieved with appropriate technologies and data driven decision.

Power BI & R: Oliver O'Shea

- Oliver is a SQL and VBA developer who is SAS and MATLAB certified and is now working with Python, R and Power BI.
- He has worked in shipping, banking and other industries in the UK and Australia.
- He enjoys numbers, running, puzzles, climbing and tennis.

Power BI & Power Apps : Samit Saini

- I am a London based Power BI PowerApps evangelist at Heathrow. I have been working for Heathrow for over 14 years, loved every minute of it.
- This time last year i was a security officer searching Passengers bags and asking them to remove liquids laptop and iPad
- now I’m an IT Solution Specialist, empowering colleagues how to create PowerApps and how to convert data into visualisation.

Alphaa.ai Power BI & voice

- TBC

Power BI Data Scientist & Artificial Intelligence Solutions 6 weeks ninja course.

- 15 Power BI developers sharing niche skills.
- Start 4th March every Monday eve for 6 weeks to 8th April
- Application process: submit details & 1 page niche SME article.
- Niche areas: Python, R, SSAS, SSRS, DAX, Azure ML, Azure Cognitive Services, PBI Enterprise architecture, Visualisation d3.js, PowerBI Embedded, IoT edge AI, Databricks, ML models, SQL/SSMS, and others ?
- Deadline submit by Monday 18th midnight. Results Wed 20th.
- Pay fee £90 (£15/eve; seat&snack) & enrol by Mon 25th
- Attend pre-session wed 27th Feb (London PBIUG).
- Start course 4th March every Monday eve for 6 weeks to 8th April
- Presentation of work here mid April'19 will be this groups next session.

Application

- https://www.surveymonkey.co.uk/r/9D8YKD7 (see QR code)
- Submit 1 page A4 power BI niche SME area to david@wottabyte.com
- An article explaining your SME and how it integrates into PowerBI.ai
  Article content will be published on public web portal blog.
- Connect & post on Linkedin about this course (see text next page)

Social Media Instructions

- Join linkedin and connect with me ‘David Moss’ and also follow ‘wottabyte |Data Analytics’ then in Linkedin ‘Start a post’ and post to @wottabyte and @DavidMoss stating you have applied to join the ‘Wottabyte #PowerBI #powerbi.ai team’, with a link to www.powerbi.ai
- If we are already connected simply do the post on Linkedin. Yes thanks we need some free PR.

powerBI.ai