

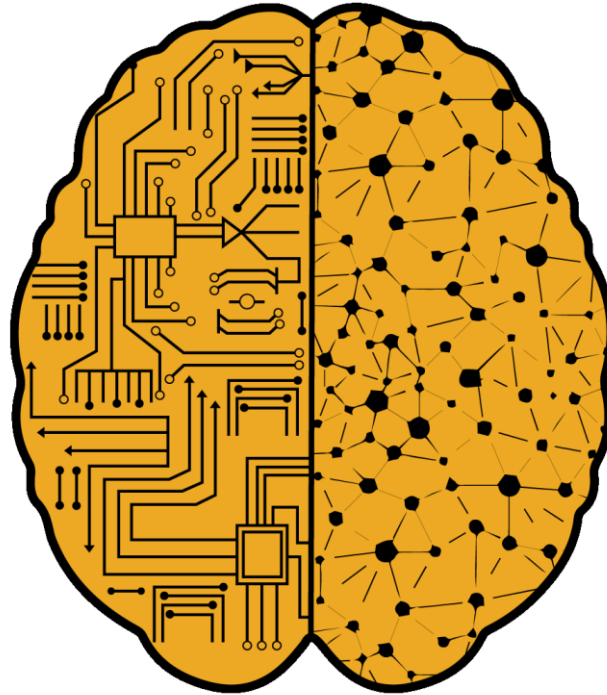
Data Engineering Meetup

June 2019

June 2019 **Modelling and Integrating with Azure Machine Learning**

Presenter: Mick Badran
Azure MVP, Insider, Advisor
Handled Co-Founder & CTO
@mickba

Modelling and Integrating with Azure Machine Learning



“Simple models and a lot of data trump more elaborate models based on less data”

The Cloud

"640K ought to be enough for anybody." - Bill Gates, 1981

Who Am I

Co-Founder &
Azure MVP, I
@mickba,mick@mickbadran.c



Helping people to payless for energy



Why Handled



- Sick of the not knowing in the energy market.
- Help people optimise their circumstance & control their privacy.
- Show the whole market
- This is just the beginning

Agenda

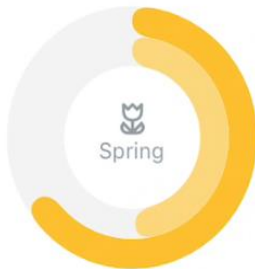
- An interactive app walkthrough
- Create real world context
- Modelling + ML Integration
- Demo
- Wrap Up
- Q&A

An interactive app walkthrough

- Grab the app from here:
- <https://handled.app.link/mick>
- (or search for 'Handled' in the app/play store)
- Install
- DEMO: The App

Create the real world context

Predicted Energy Usage



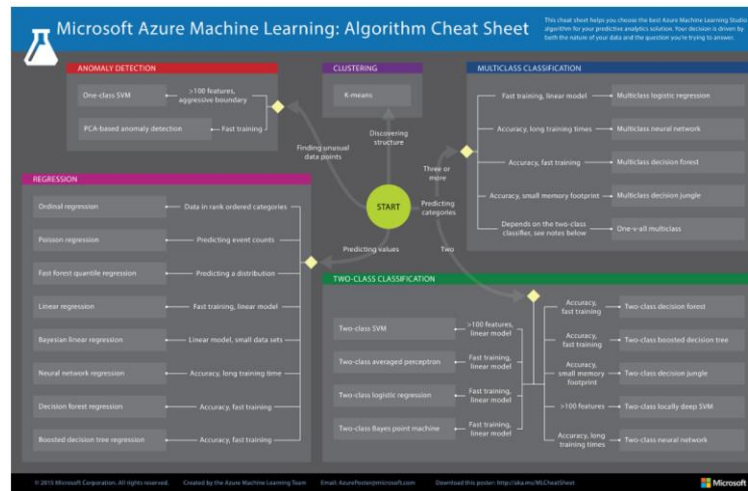
Electricity (kWh)

Gas (MJ)


- **Dataset** – Households Usage Data aka Load Profile
- Other services feed off Load Profile:
 - Solar
 - Storage
- Things (we think) affect Load Profile:
 - Location
 - Season
 - Pool, Heating, People....

Modelling + ML Integration

- Simple models and a lot of data trump more elaborate models based on less data
- $F_n(x) = y$
- Choosing a model - <https://docs.microsoft.com/en-us/azure/machine-learning/studio/algorithm-cheat-sheet>



Sample Handled Model

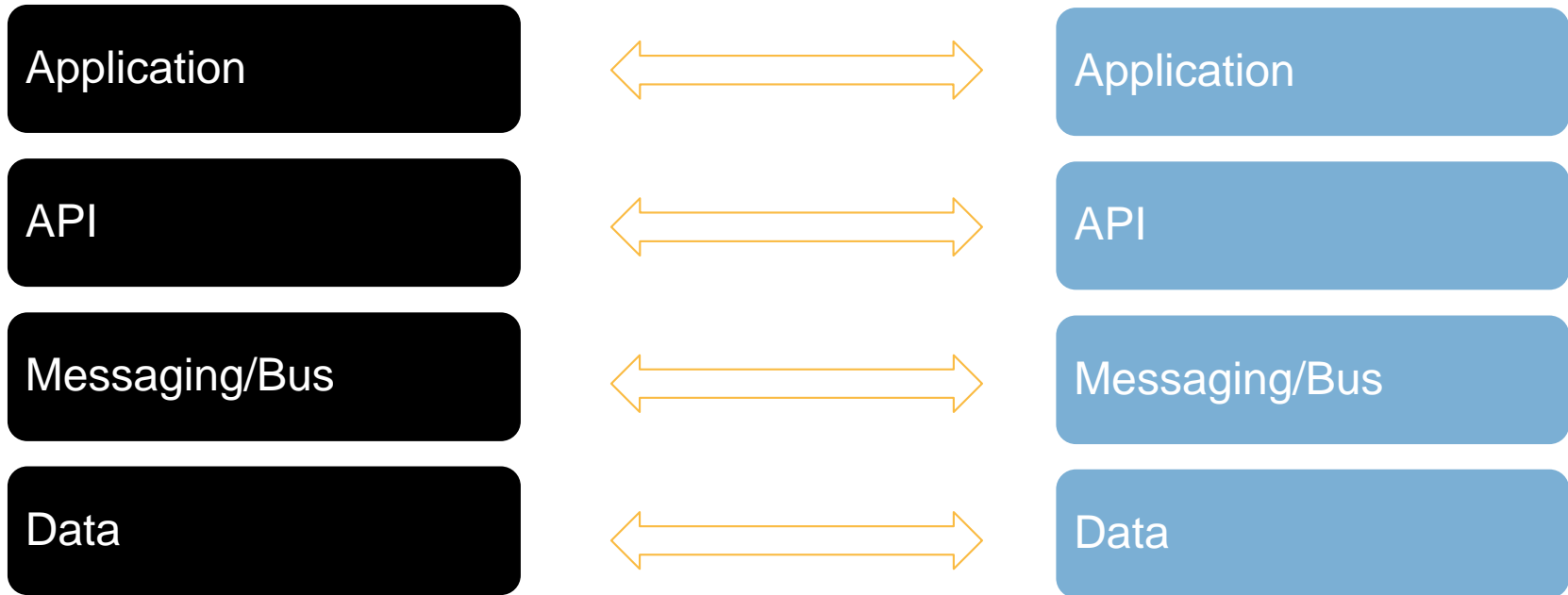
- Usage (off a Bill)
- Location
- (Other factors) 
- Load Profile

New charges and credits.

Usage and supply charges	Units
Peak	429.145kWh
Off peak	807.656kWh
Shoulder	1114.907kWh
Supply charge	91 days

ML Integration

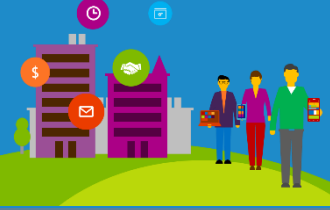
- Integration can occur at different levels



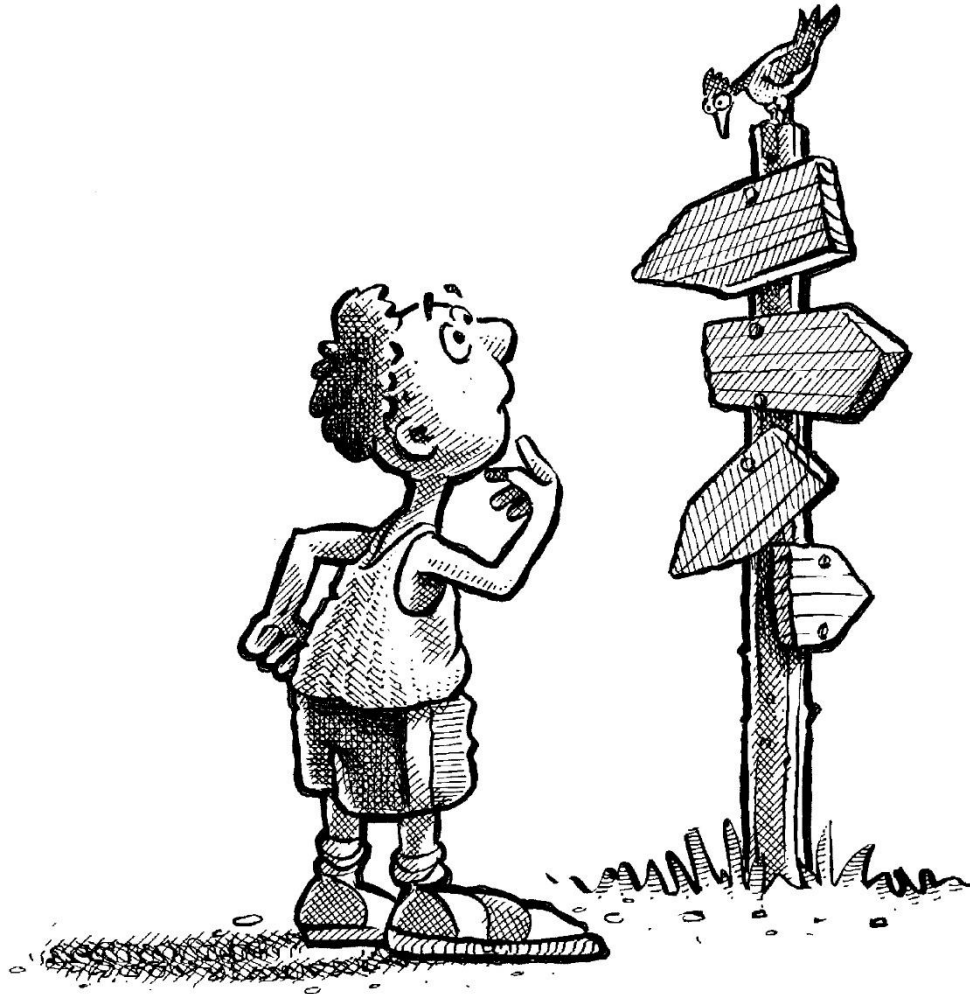
ML Integration

- ML.NET - <https://github.com/dotnet/machinelearning>
- Web Services
- Data layer
- I used a combination of Web Services and Data Layer

ML/Integration Demo



Demo



Helping people to payless for energy



handled

Wrap Up

1. Modeling – it's all about context
2. Integration – many different ways
3. Handled – real world result of some hard work

Q&A



Thank you & have a great evening!

Mick Badran – Azure MVP

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