Using data to deliver more, and faster

Emma Presley Abbott

Head of Data Science, Universal Credit, DWP
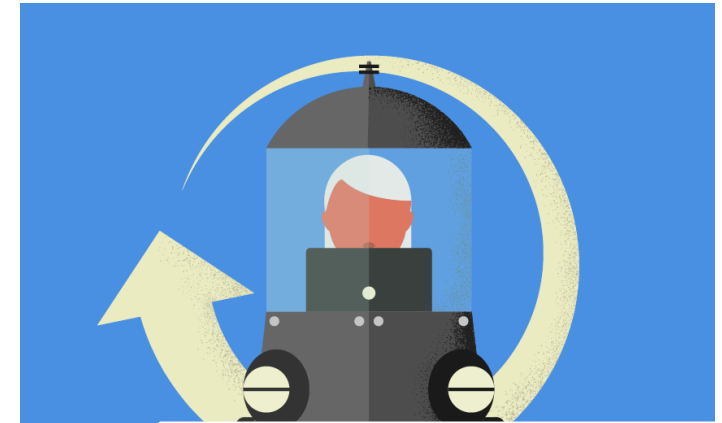
UC

Case studies to cover…

investment in frameworks and standardisation

use of trialling to support decision making

human in the loop automation to improve processes

UC

Data Science in Universal Credit

Team context:
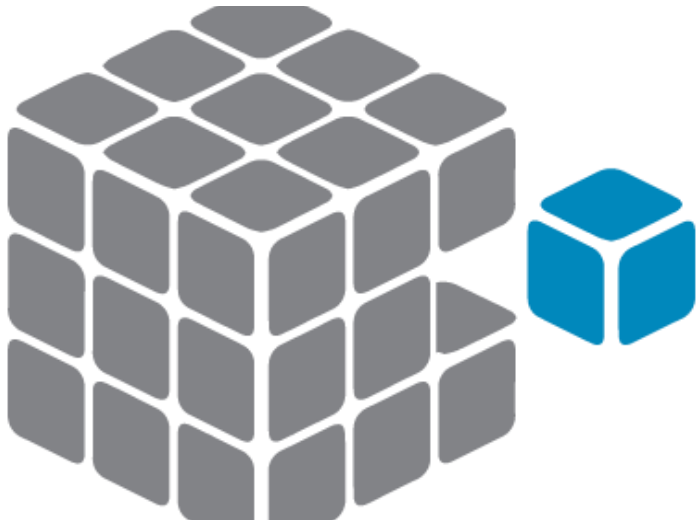
Service design focused Data Science

Embedded within digital development teams, seen as a core team role

Advocate for the use of data throughout the development lifecycle

Invest in the 20% time concept for innovation

Investment in frameworks and standardisation

Problem statement	Our approach	Delivering more, and faster
• minimise response time to most common data questions, to encourage data-evidenced decision making • reduce the effort required to answer these questions, to direct attention more complex data science applications	• design a data framework based on an entity network, to handle pre-calculated characteristics and outcomes that can be combined as required to answer questions • use a scheduled job to update this data daily, so latest information is always available	• ensure the framework is easily extensible, so any team member can add new data items, for consistent use across the team • handle the manipulation and storage of billions of rows of data from a range of sources

UC

Use of trialling to support decision making

Problem statement

- accelerate the rollout of Confirm Your Identity (CYI), a new service to verify a claimant's identity that is being integrated to the UC new claim journey
- using UC's automated A/B trialling framework to trial first

Our approach

- run iterative trials of increasing size to minimise any potential negative impact of the introduction of the CYI service on claimants

Delivering more, and faster

- automate the evaluation process to provide results within 4 hours of each trial
- reuse this automation for future trials, reducing the overall cost of trial design and evaluation, enabling more A/B trialling to be supported

A

B

UC

Human in the loop automation to improve processes

Problem statement

- during the COVID-19 period, the processing of payments was prioritised, resulting in backlogs of work elsewhere, such as a large backlog of journal messages from claimants that needed to be reviewed

Our approach

- create a simple rules-based text classification model to identify "thank you" messages, penalise false positives to ensure that important messages are not deprioritised
- present these to colleagues in a way that allows them to either quickly dismiss, or de-prioritise them

Delivering more, and faster

- work with user-centred design colleagues to establish service patterns around text classification
- work with developers to build a separate microservice for this functionality, so it can be scaled effectively to handle more complex use cases in future

UC