



# Fusing Data and Design

## Tales from a flipchart

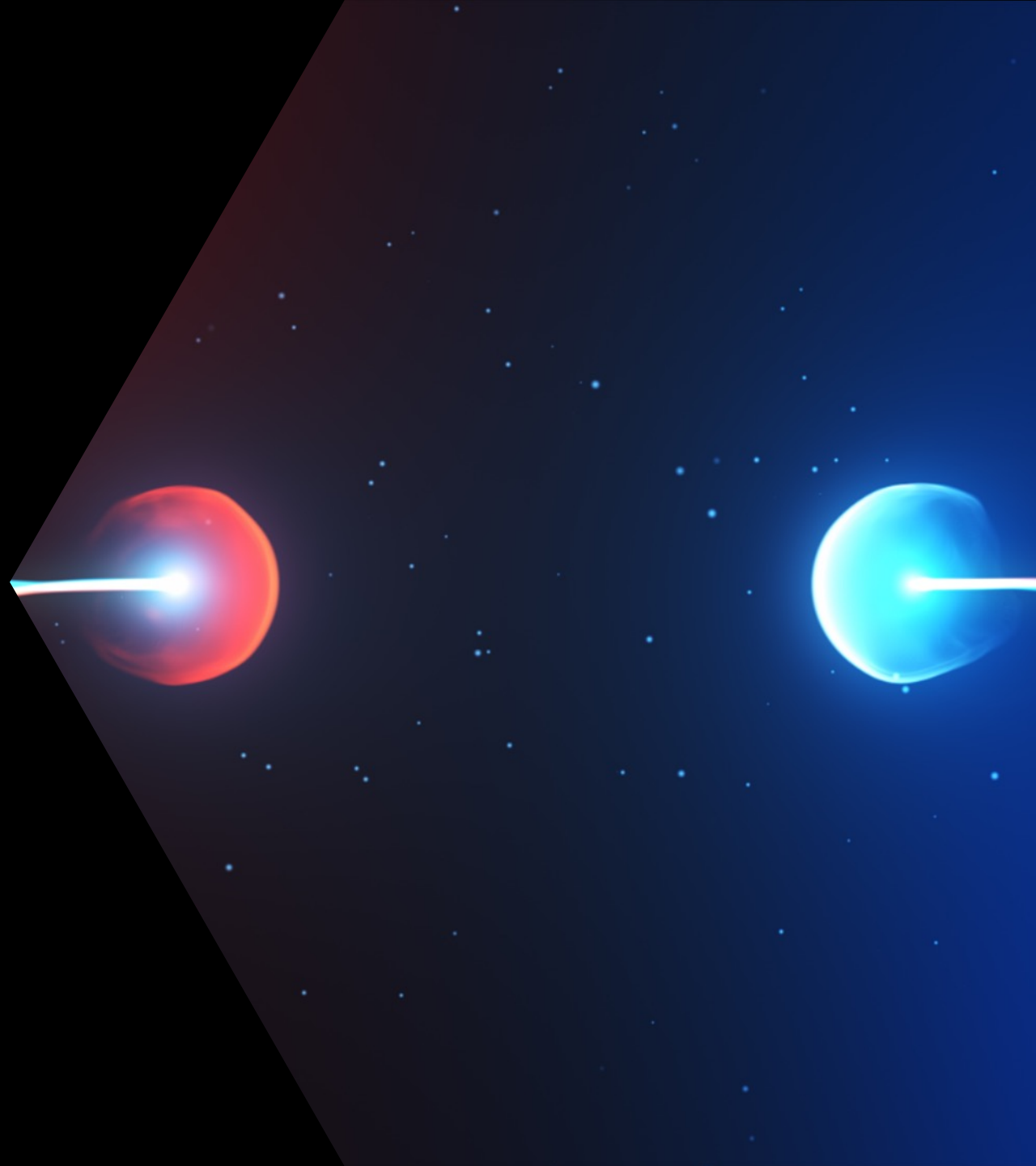
Tim Daines, Designer

Philip Pilgerstorfer, Data Scientist

**in** quantumblack



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We exploit data, analytics and design to help our clients be the best they can be

We were born and proven in Formula One, where the smallest margins are the difference between winning and losing and data has emerged as a fundamental element of competitive advantage





10 years of experience aka scar  
tissue

No silver bullets

# Working in expert silos narrows view on data

Data  
Science

Data  
Engineer

Design



timdaines



philippilgerstorfer

# Interdisciplinary perspectives on data are at the core of an AI solution

Human decision making with data

**Designer**

**AI  
Solution**

**Data  
Engineer**

**Data  
Scientist**

Translating data  
into structured  
formats

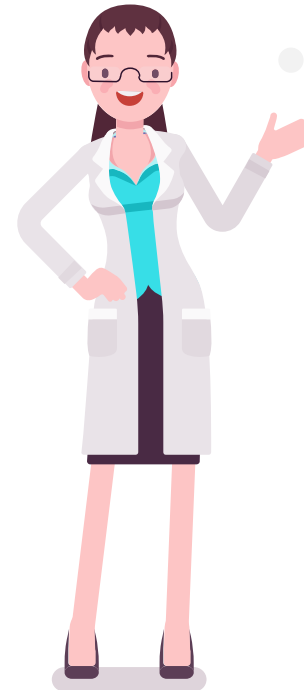
Patterns in data

# Designer and Data Scientist are closest to the user

Understanding how and why things are truly the way they are



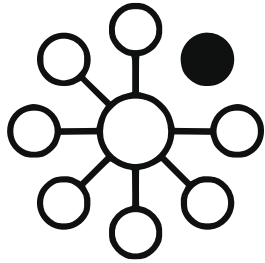
Designer



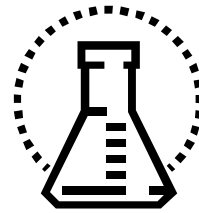
Data Scientist

Developing algorithms that make predictions based on historic data

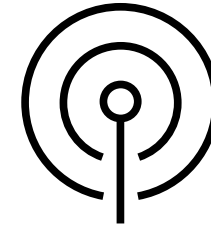
# Three key shifts needed to deliver adoptable AI solutions



Silos to Squads



Experimentation &  
Convergence



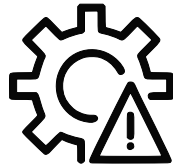
Single product mindset  
to organisational adoption

# Case study: Optimising chemical processing operations



## Goal

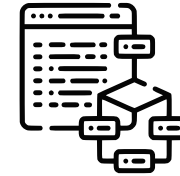
Each day, find the setup of the production network that will achieve the optimal production rate.



## The challenge

Massive complexity of the operations, initial input space  $10^{250}$ .

First of a kind AI solution in the organisation.

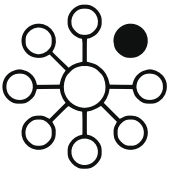


## Approach

Building an optimisation algorithm recommending a production plan to the operations team, on a day-to-day basis.



# Silos to Squads



QuantumBlack's delivery of analytics relies on interdisciplinary teams of specialists including domain expertise, design, engineering and analytical skills

## Engagement Directors

Works with clients, engineering, and design to identify requirements and potential solutions and communicates those to the client.



## Data Engineers

Extracts, wrangles, cleanses and links data, and presents the data in a form ready for analysis.



## Designers

Runs workshops, communicates insights clearly, designs data visualisations and tools



## Content Directors

Senior advisor to engagement team, bringing content expertise to accelerate and assure delivery. Expertise can be from domain or analytics perspective as required .



## Engagement Managers

Leads the day to day of a project, guides team members, and owns the project's deliverables.



## Data Scientists

Completes complex mathematics, writes and optimises algorithms, explains findings and predicts results



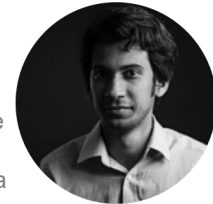
## Technical Architects

Works with clients and project teams to ensure optimal architecture and technical design for solutions

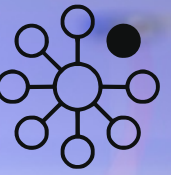


## Machine Learning Engineers

Links Data Scientists and Data Engineers, makes the data sets work for the science and translates data science insights into business analytics.



# Day-to-Day Collaboration



- Co-located desks
- Daily stand-ups
- Weekly team learnings
- Full-team problem solving sessions
- Joint client interviews

Designer

Data Scientist

# Experimentation & Convergence



We use QuantumBlack's protocol – People, Process, Technology



Ideation



Intelligence



Inception



Intervention

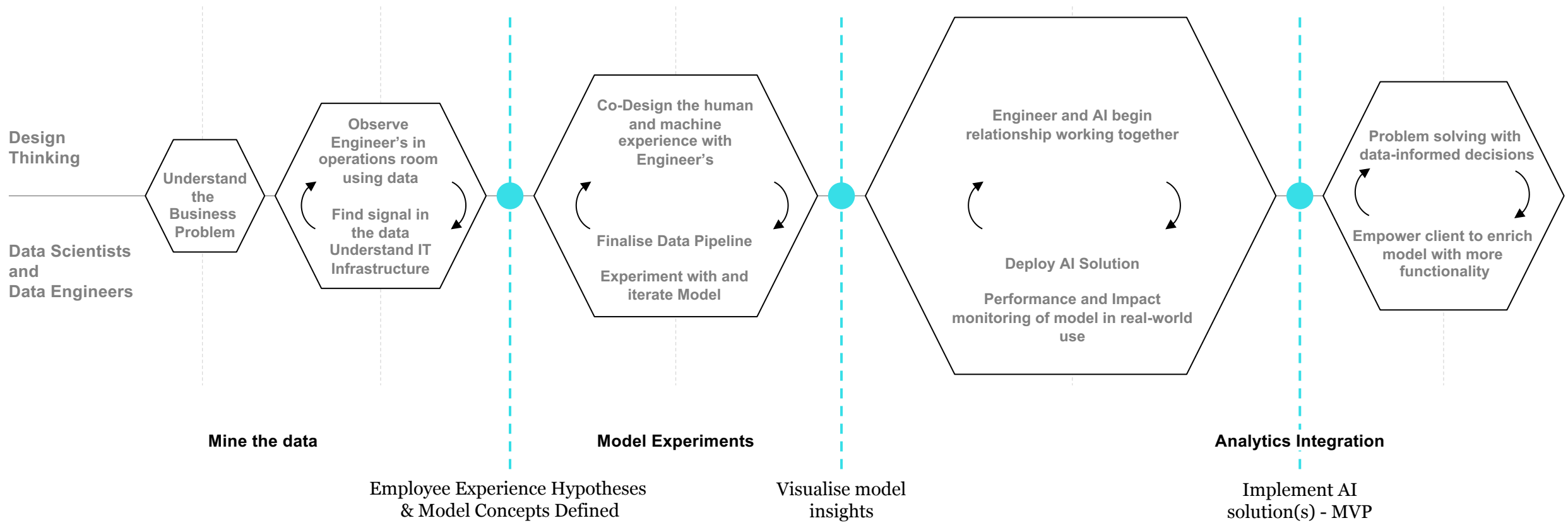


Independence

Jobs being done with data

Employee Interaction Experiments

Jobs being done with AI/ML



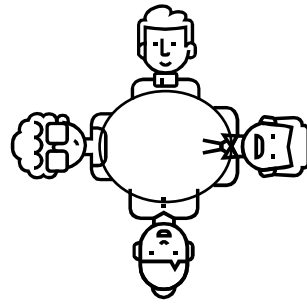
# Experimentation & Convergence



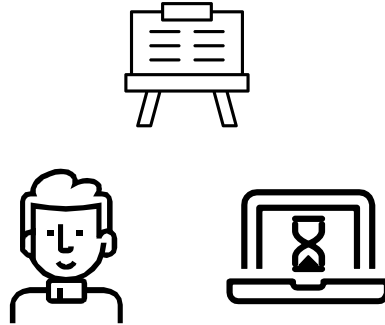
Turning object function of optimiser into a human metric - triggering decision making



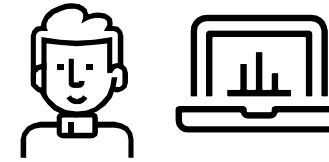
Understand Engineer Decision-Making



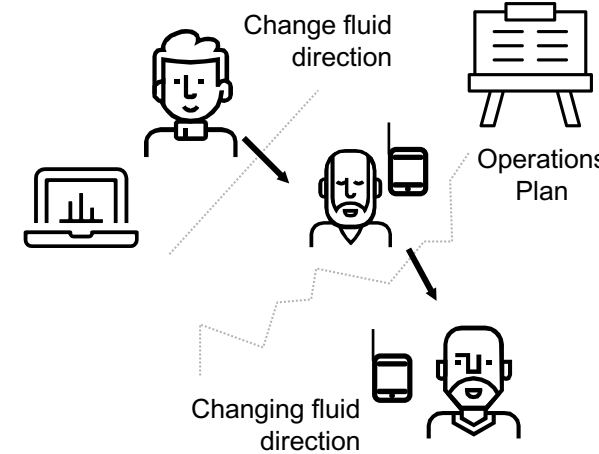
Siloed data used to make decisions



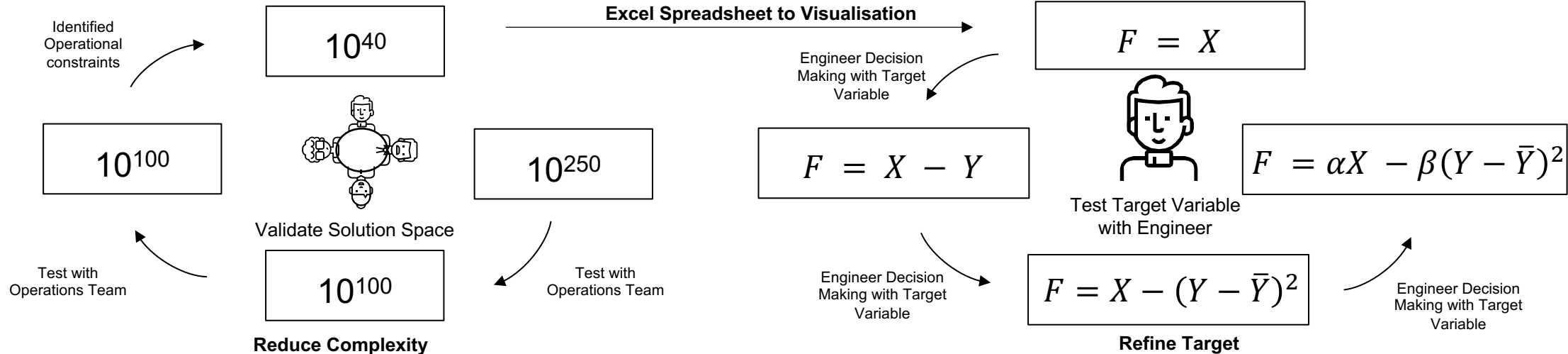
Test 'Trust' in AI generated data



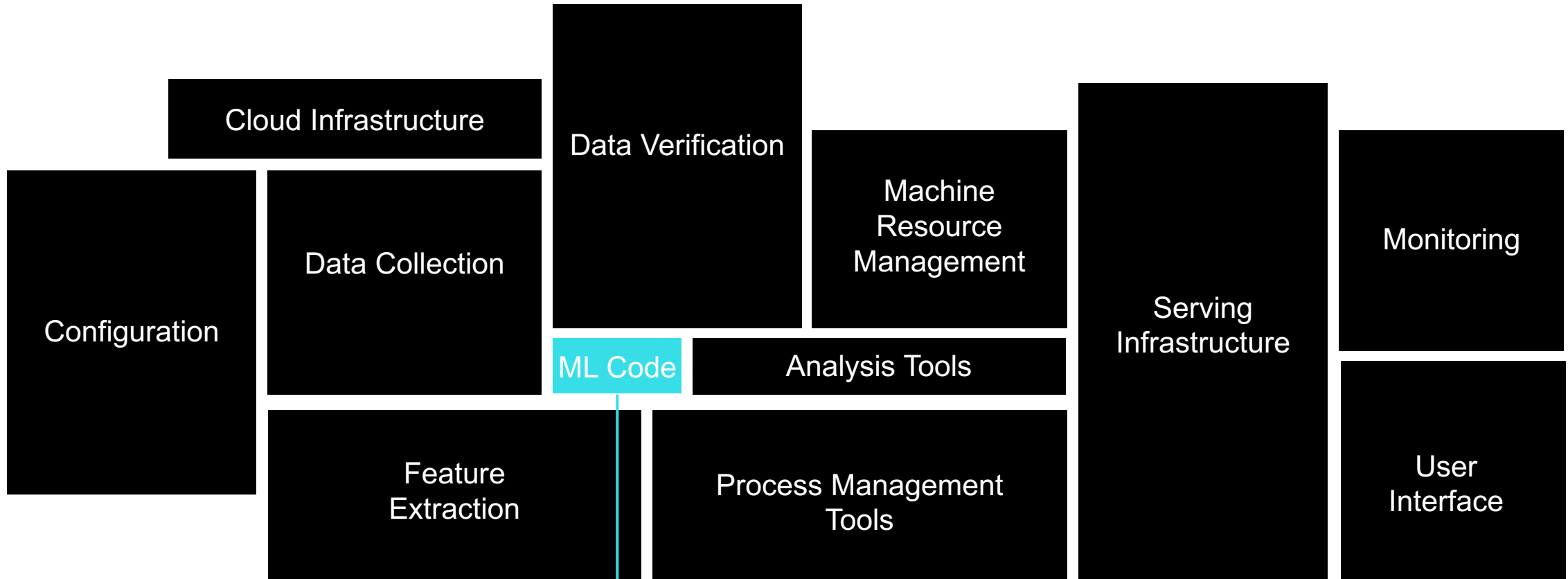
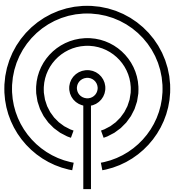
Test 'Target Variable' in AI Solution



Defining Model Space



# Single product mindset to organizational adoption



Data Scientist needs to consider wider context

Designer helps identify organisational experience

# The 'aha moment' seeing the value in a natural setting

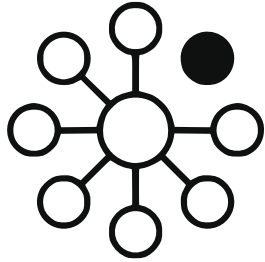


Data Scientist

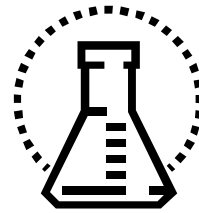
Client's Lead Engineer



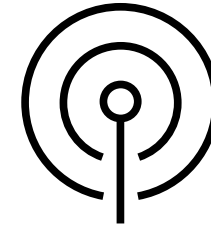
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# Questions & We're Hiring



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