



Data Science to solve real world problems

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GRADnet Machine Learning & AI Workshop 2022

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Outline of this talk

- Who am I? What is my background?
- Who are Accelelex, what do we do?
- How has my background helped me in industry?
- Things to consider when looking for a job

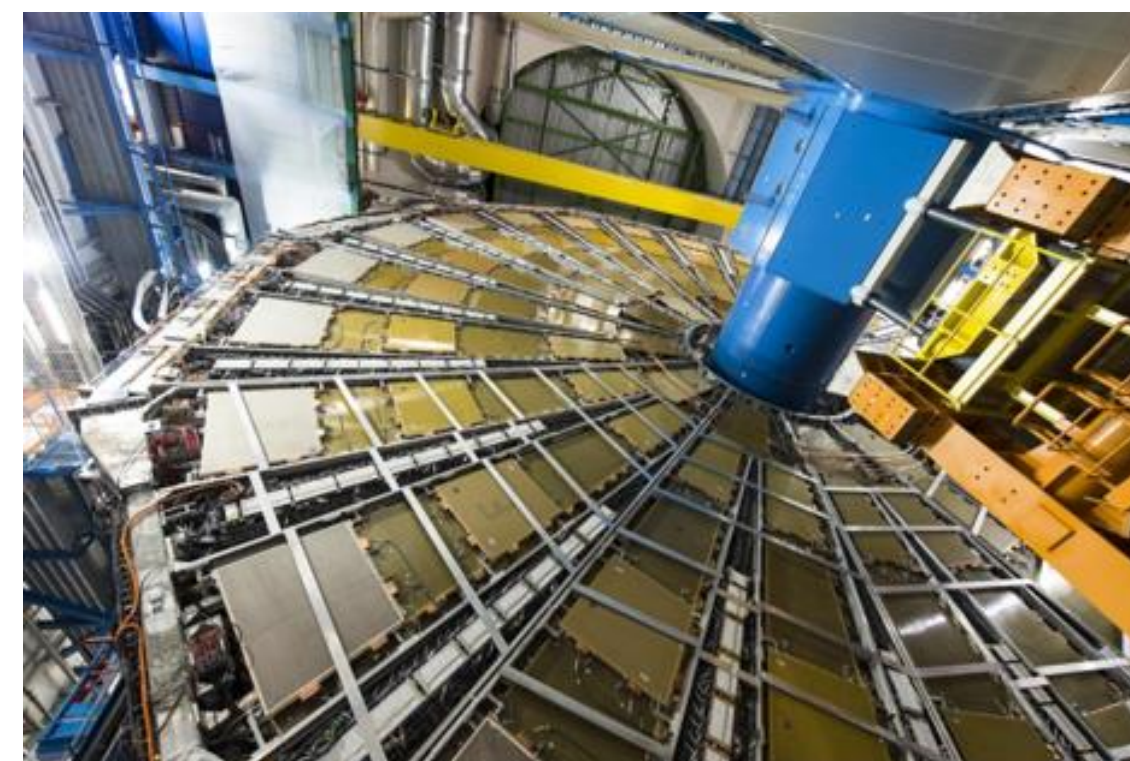
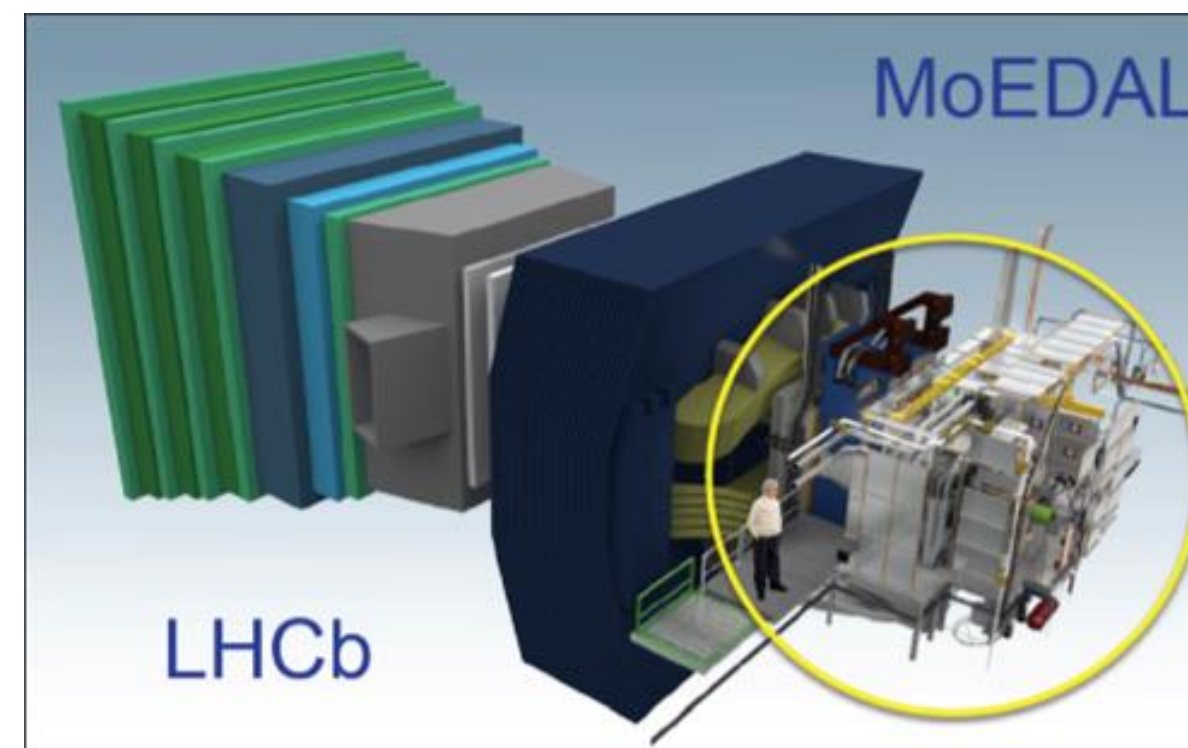
My background in Physics

- Foundation year + MSci in physics at QMUL
- Learned to code via undergraduate C++ course, internships (Python) and personal projects
- Started a PhD at QMUL working on the ATLAS and MoEDAL experiments



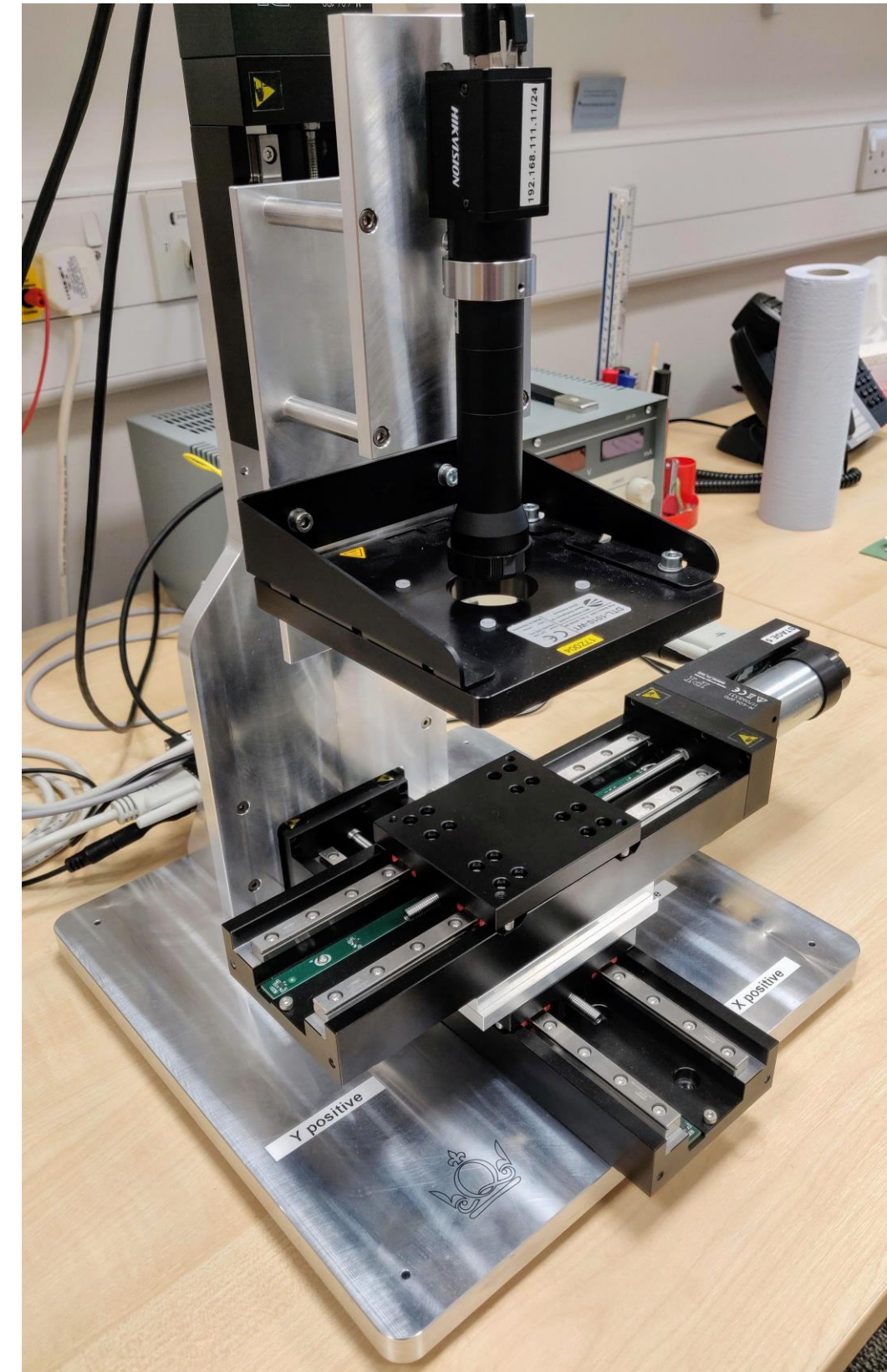
My background in Physics (PhD)

- Completed research on the MoEDAL and ATLAS experiments
- MoEDAL: detection of microscopic damage to polymers using computer vision algorithms
- ATLAS: Modelling of systematic uncertainties on Higgs boson analyses using machine learning



My background in Physics (PhD)

- Qualification task: development of an area scanning robot for quality control of silicon strip sensors
- Teaching: demonstrated courses in C++, Python, statistics, and mathematics





Accelelex highlights

Outstanding growth since platform launch in June 2020

2018

company founded

>35

people in London,
Luxembourg Paris,
New York & Toronto

>10

clients as of end of
2021

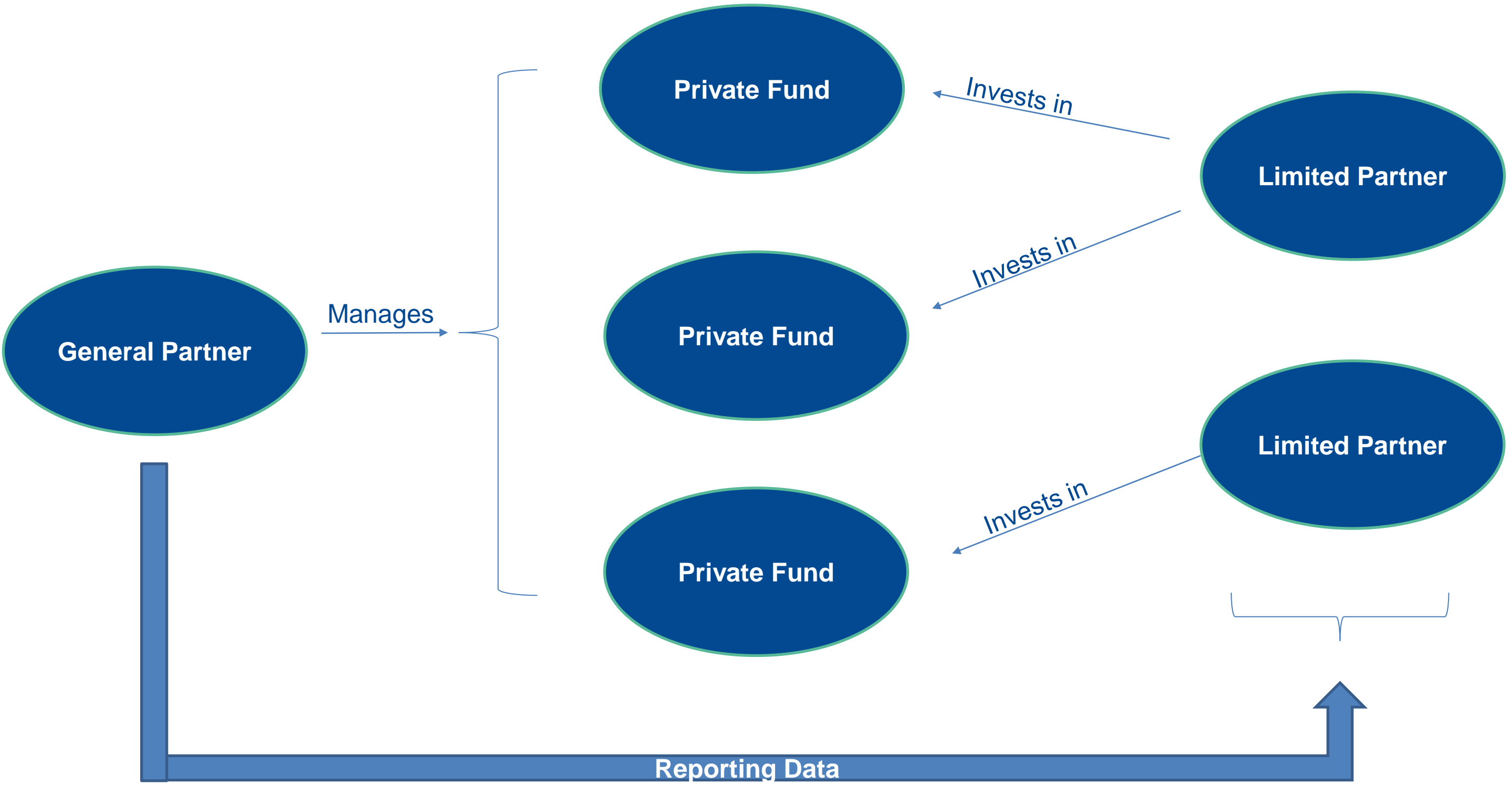
\$5m

seed investment
round May 2021

Transforming labour intense and often error-prone workflows to simplify the process of data acquisition, analytics and reporting of transactional and investment data.

Unleash the power of your private investment data with Accelelex's proprietary machine learning and artificial intelligence software.

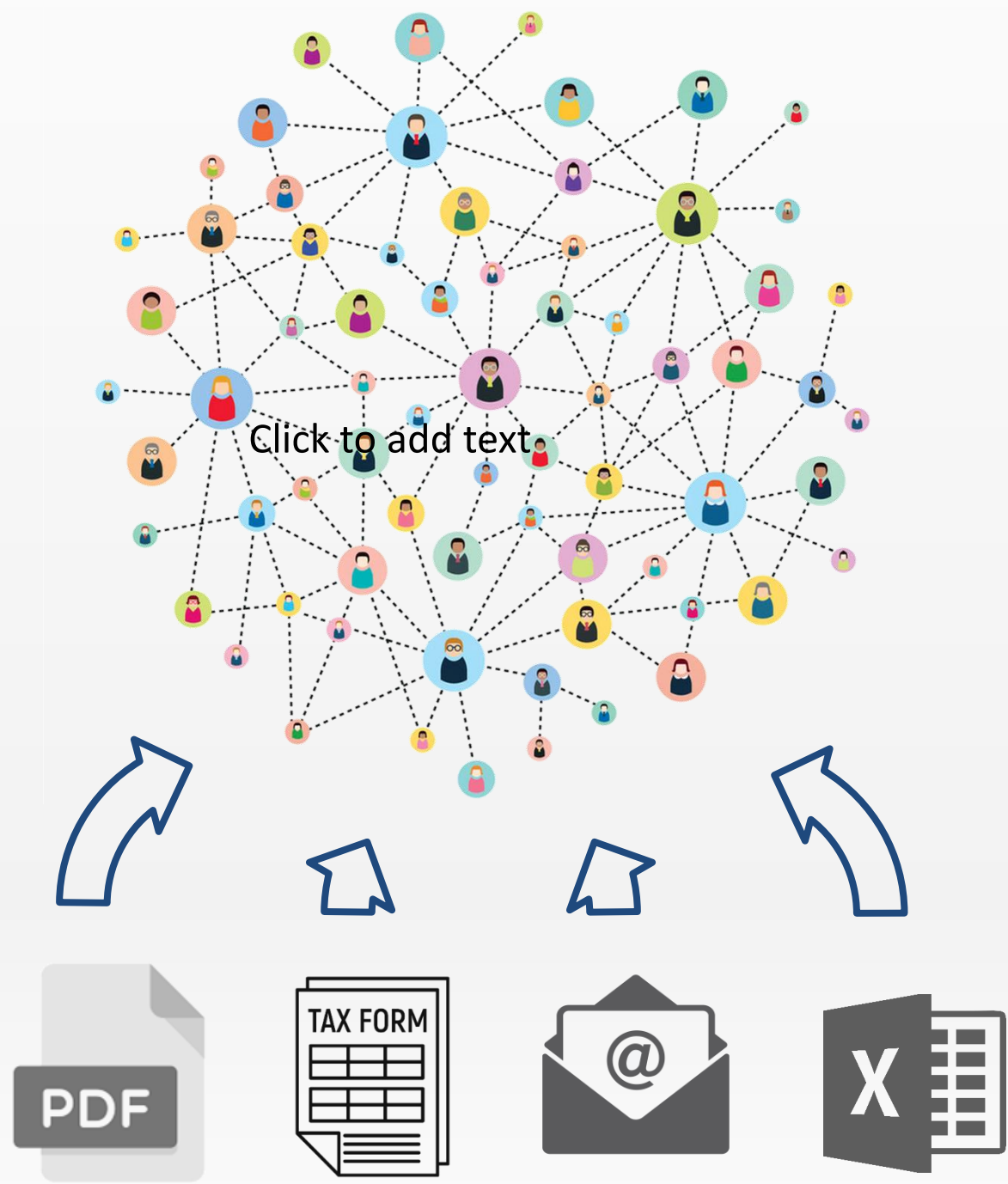
Intro to Private Markets



Participants communicate via unstructured content; a long journey from information to decision

Growing pressures

- Processing cost
- Competition
- Complexity
- Accuracy
- Regulation



Opportunities

- Transparency for investors
- Informed investment decisions
- Control, risk management and compliance



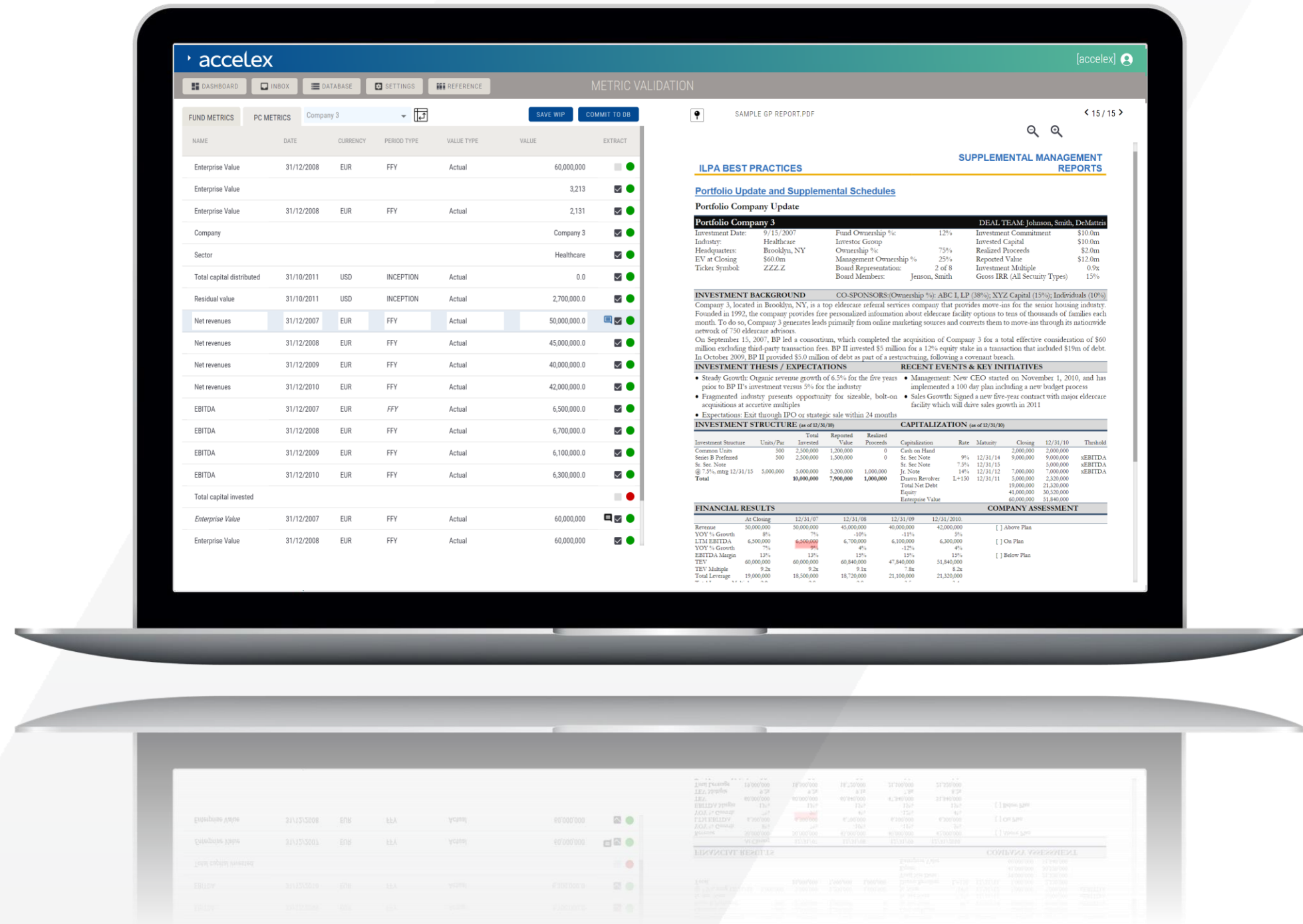
Our SaaS platform enables investors to extract and benchmark valuable data from unstructured content

Intuitive user experience

Dynamic data extraction powered by proprietary algorithms

Market-specific data model and collaboration platform

Full data and process auditability



Key benefits we offer our clients



DOMAIN EXPERTISE

Private markets focus with an intuitive user experience



AUDIT TRAIL

for data points including traceability to and within a document



TIME SAVINGS

accelerated data acquisition process



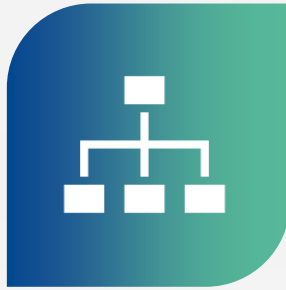
SCALABILITY

extraction of more metrics, more documents, more often



ACCURACY

artificial intelligence delivering measurable accuracy performance

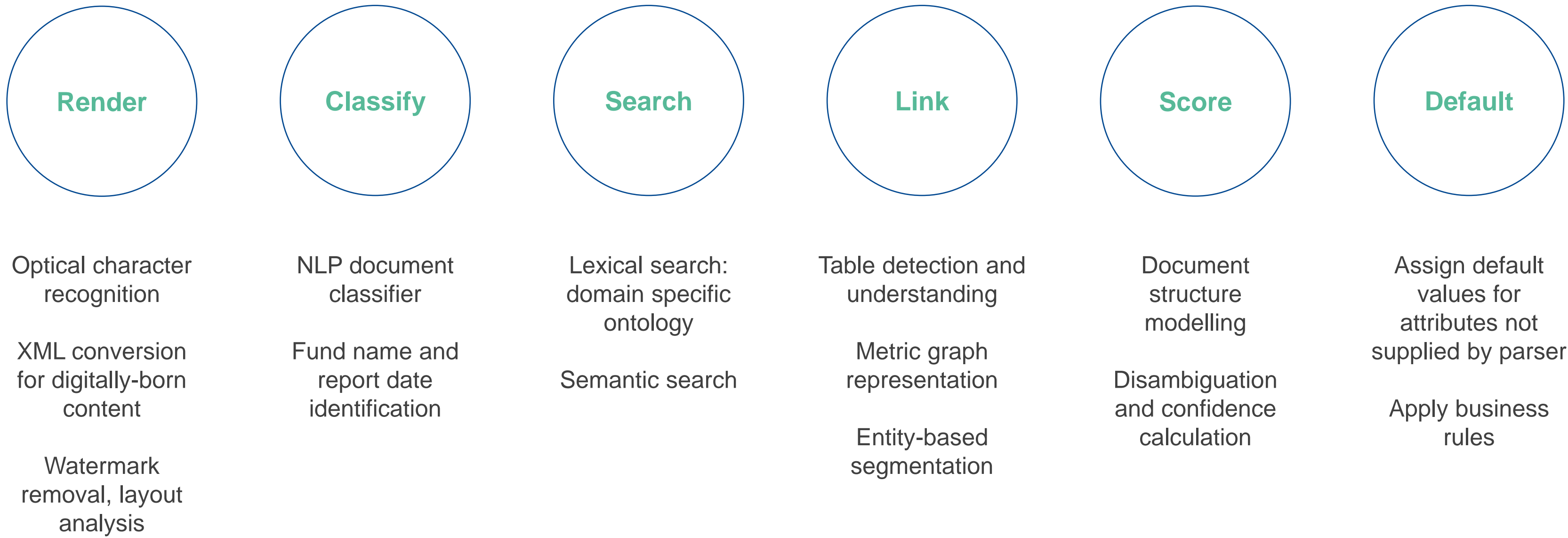


OWNERSHIP

internalize and take control of your data strategy

Parser pipeline overview

Complex data science pipeline to deliver accurate results for validation



Unstructured to structured data



Excelsior

Headquarters: USA

Sector: Consumer Discretionary

Company Overview

Operating through two business units, Excelsior provides wiper blades and auto care accessories (Pylon®), as well as brake hardware and related components (International Brake Industries®), to the automotive aftermarket. The company is the market leader in hybrid blades that it sells under a variety of iconic brand names, including Michelin, and is the leading North American supplier of brake hardware to the automotive aftermarket.

Securities Holdings of WECP

(\$ in millions)	Date of Purchase	Shares	Cost	Current Value
Realized				
Interest	Various	--	--	\$8.9
Subordinated Debt	October 2016	--	\$27.6	27.6
Unrealized				
Common Stock	October 2014	522,502	\$52.3	\$143.2
Total			\$79.9	\$179.7

Income Statement and Net Debt

(\$ in millions)	FYE 12/31	FYE 12/31	FYE 12/31	LTM 6/30	LTM 6/30	YTD 6/30	YTD 6/30
	2017	2018	2019	2019	2020 ⁽²⁾	2019	2020 ⁽³⁾
Net Sales ⁽¹⁾	122.6	117.9	158.3	118.6	177.9	20.7	40.2
EBIT	23.1	24.2	30.1	24.5	32.5	4.1	6.4
EBITDA	22.9	23.8	29.5	24.1	32.0	3.6	6.2
Net Debt	96.2	88.9	89.2	86.1	92.0	86.1	92.0
# Employees	206	276	326				

(1) LTM and YTD 2017 Net Sales include adjustments made in Alvarez & Marsal Quality of Earnings report completed in February 2017
(2) LTM 2019 revenue and EBITDA includes 7 months of Costco performance since launch
(3) YTD 2019 revenue and EBITDA is inclusive of Costco performance



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Unstructured to structured data

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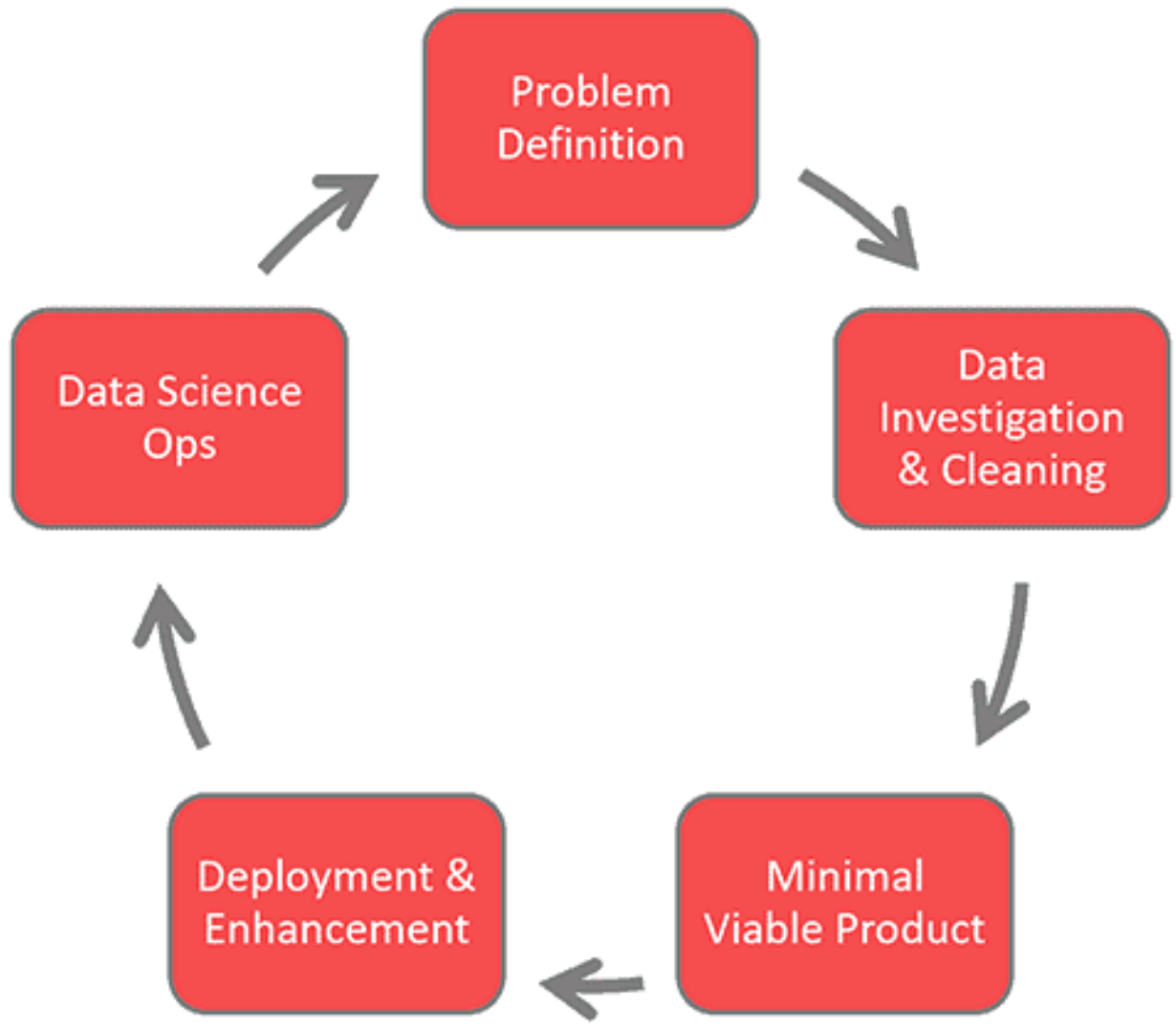
Linking and attribution: table understanding

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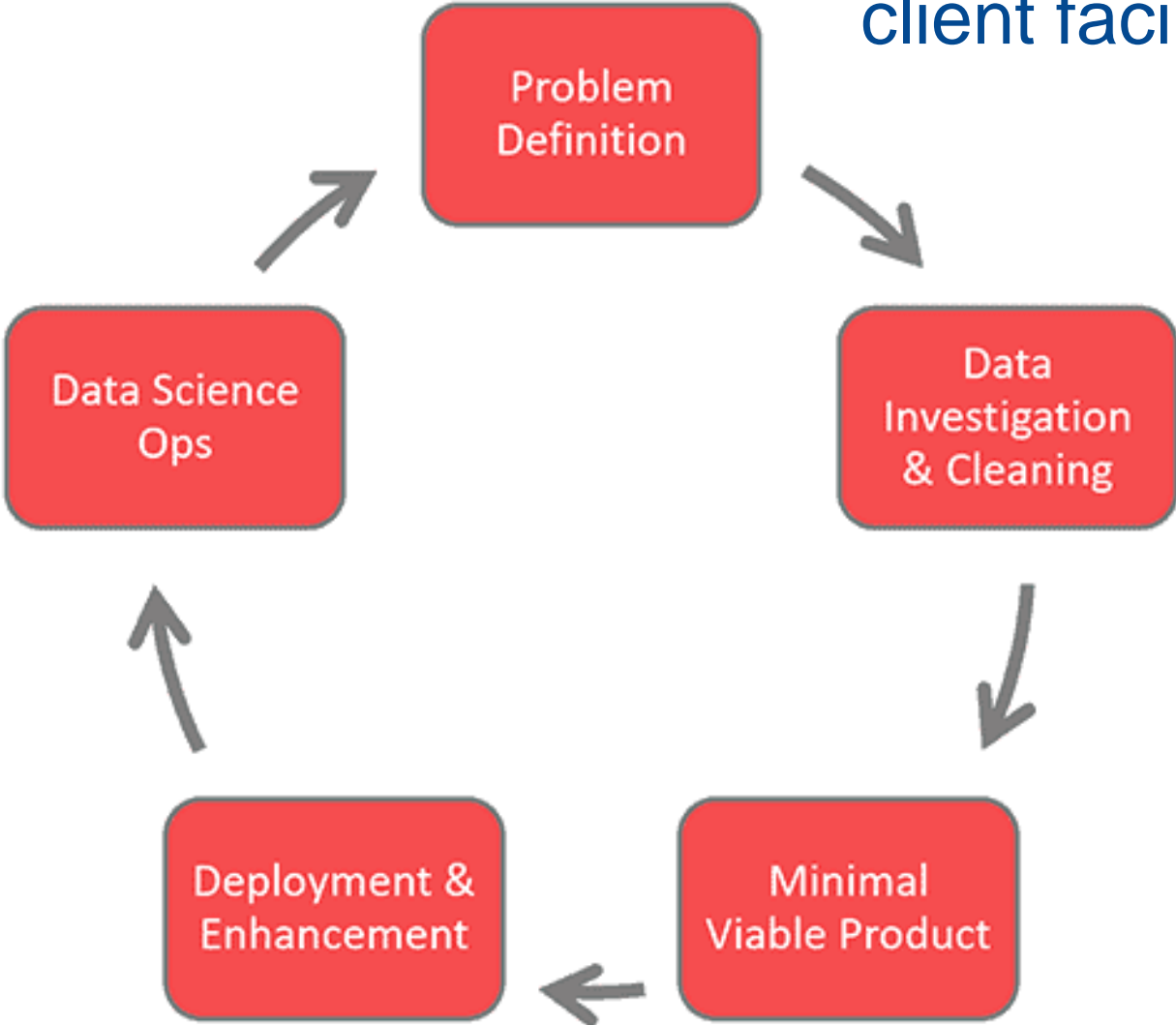
- Table structure: understanding the row and column relationship
- Table structure is used to link search results and form metrics
- Metrics are represented as graphs
- Linking can also occur outside tables, including vertical or horizontal key-value pairs

Life cycle of a data science project

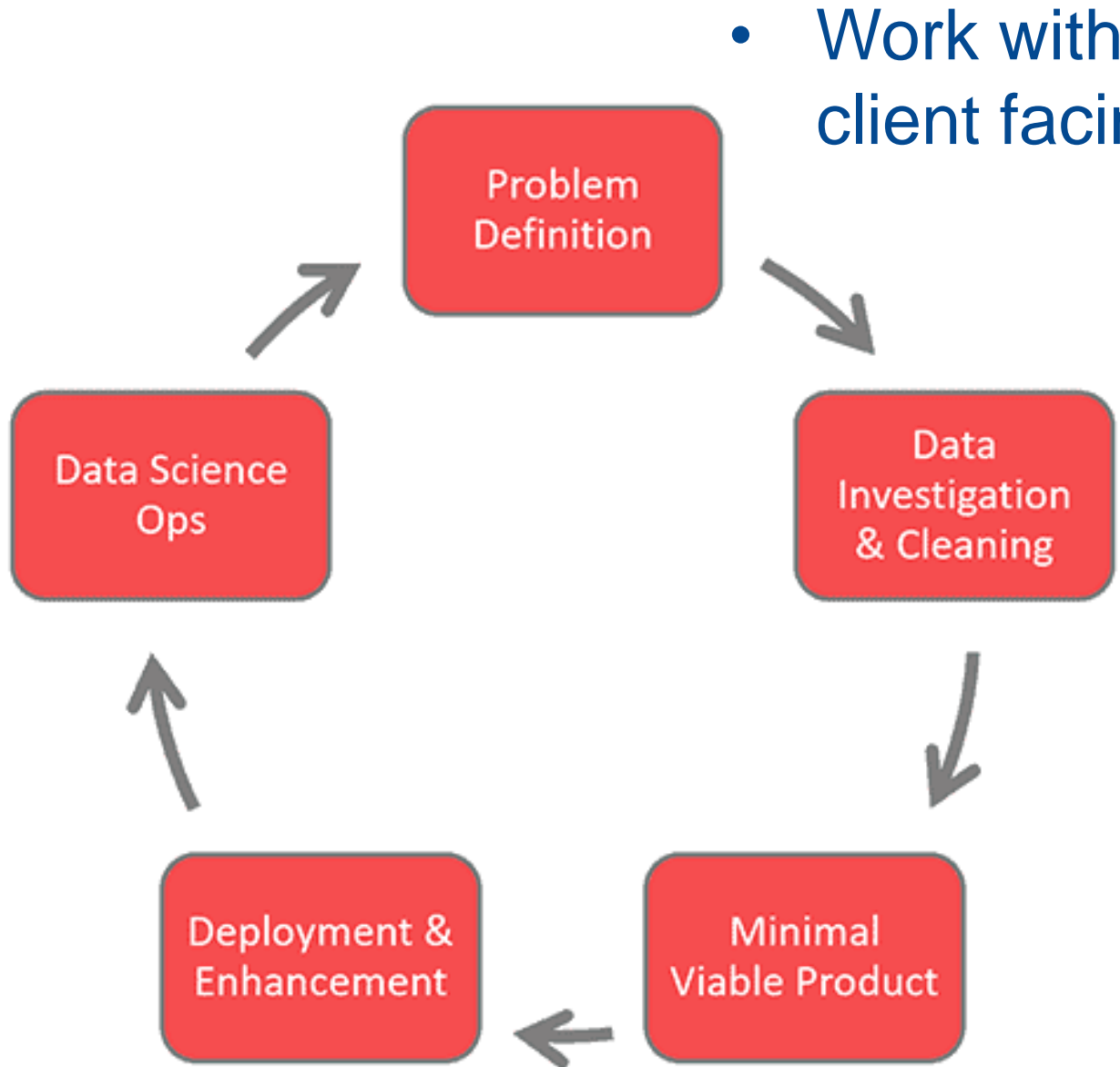


Life cycle of a data science project

- Work with clients and/or client facing colleagues



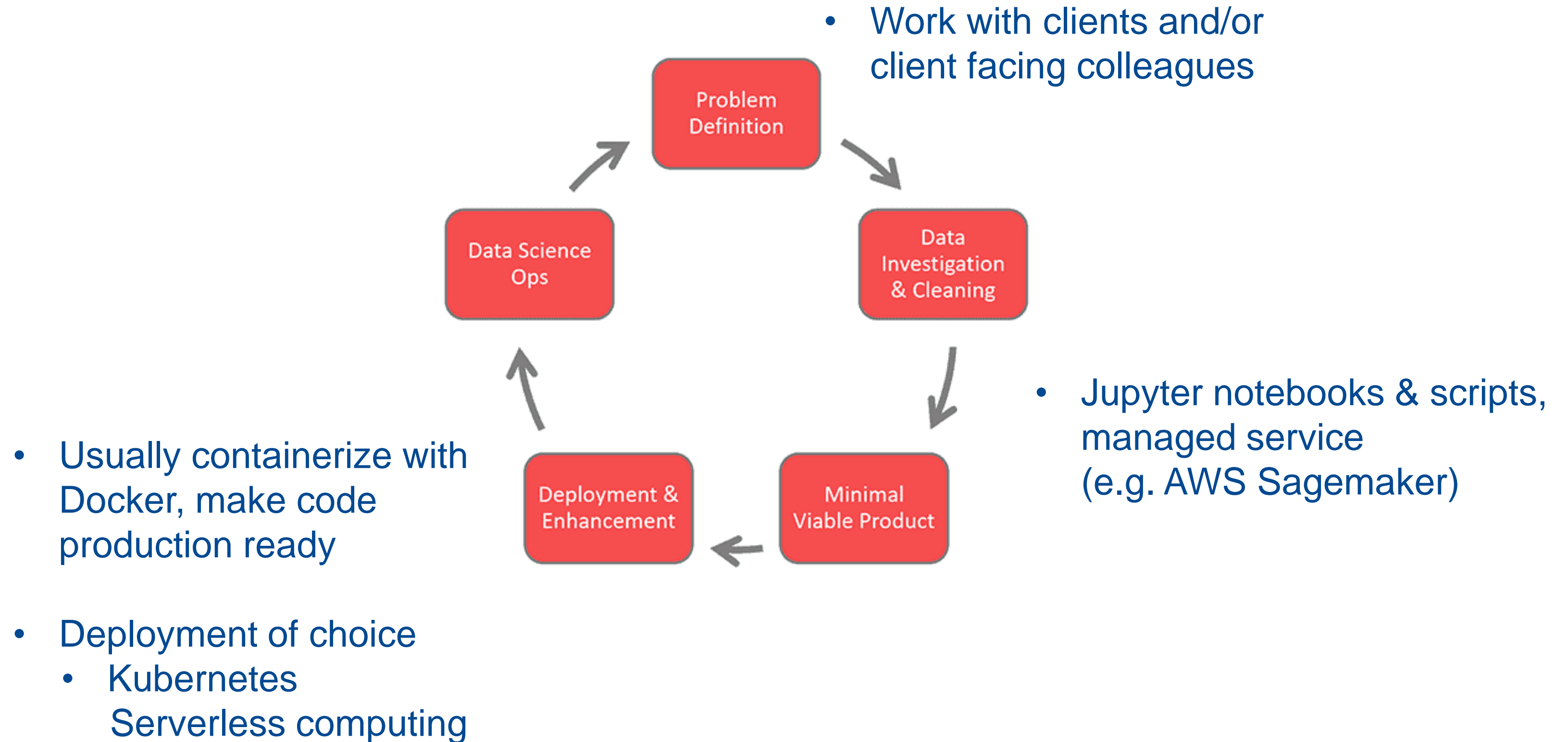
Life cycle of a data science project



- Work with clients and/or client facing colleagues

- Jupyter notebooks & scripts, managed service (e.g. AWS Sagemaker)

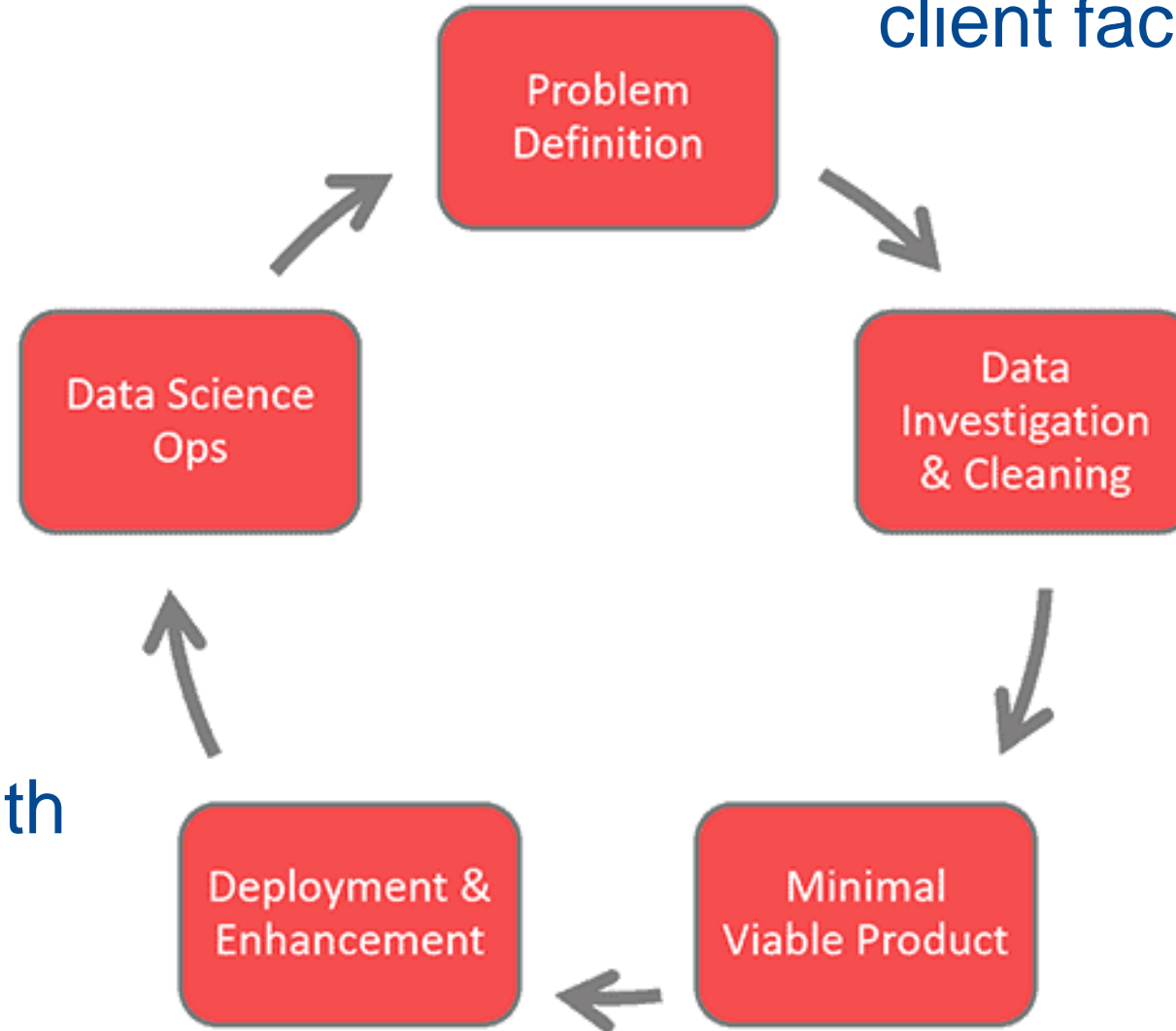
Life cycle of a data science project



Life cycle of a data science project

- Maintain software
- Manage incidents
- Monitor performance

- Work with clients and/or client facing colleagues



- Usually containerize with Docker, make code production ready

- Jupyter notebooks & scripts, managed service (e.g. AWS Sagemaker)

- Deployment of choice
 - Kubernetes
 - Serverless computing

Skills to be mindful of as you complete your PhD

- Version control – git etc.
- Good software development practices, managing dependencies etc.
- Strong knowledge of your programming language – Python, C++ etc.
- Knowledge of popular machine learning frameworks – torch, tensorflow etc.
- If you can: docker



Things to consider when starting a data science career

- Size of the company
 - Start-up
 - FAANG
- What role are you actually applying for?
 - Data Scientist
 - Data Engineer
 - Machine Learning Engineer
 - Research Scientist/Engineer
- What role does data science play in that company?
 - Business decision making
 - System monitoring
 - A product (B2C, B2B)

The logo for Meta, featuring a blue infinity symbol followed by the word "Meta" in a sans-serif font.The logo for Amazon, featuring the word "amazon" in a lowercase sans-serif font with a yellow curved arrow underneath it.The logo for Netflix, featuring the word "NETFLIX" in a bold, red, sans-serif font on a black rectangular background.The logo for Google, featuring the word "Google" in its multi-colored sans-serif font.

Thank you

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accelextech.com

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