Mathieu Galtier

We are Owkin

The first AI biotech platform company
powered by a federated data network

29 March 2022
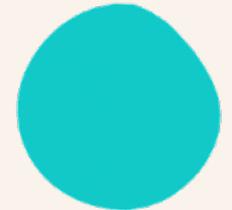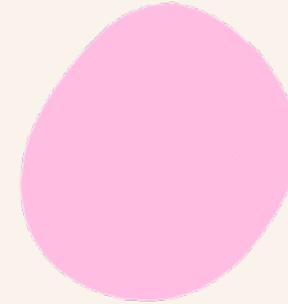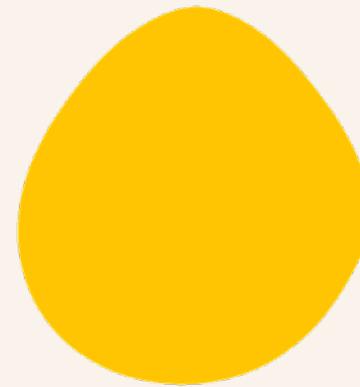
We offer an end-to-end AI powered precision medicine solution: from patient data to patient outcomes

Federated patient data access

Privacy-preserving access to the right patient datasets within Owkin's leading hospital network, with **federated learning**

IMI Melloddy

1

2

3

Multimodal determination of patient subtypes

Developing cutting-edge AI models with our team and AI Engine, in collaboration with our community of medical researchers

OWKIN

Discovery & Development

Discovery
Development

Model deployment into integrable solutions

Directly deploying AI-models into clinic or pharma workflow

What is Federated learning

Benefits

Performance: train state of the art ML models on distributed datasets

Privacy: keep data safe and secure as they never move
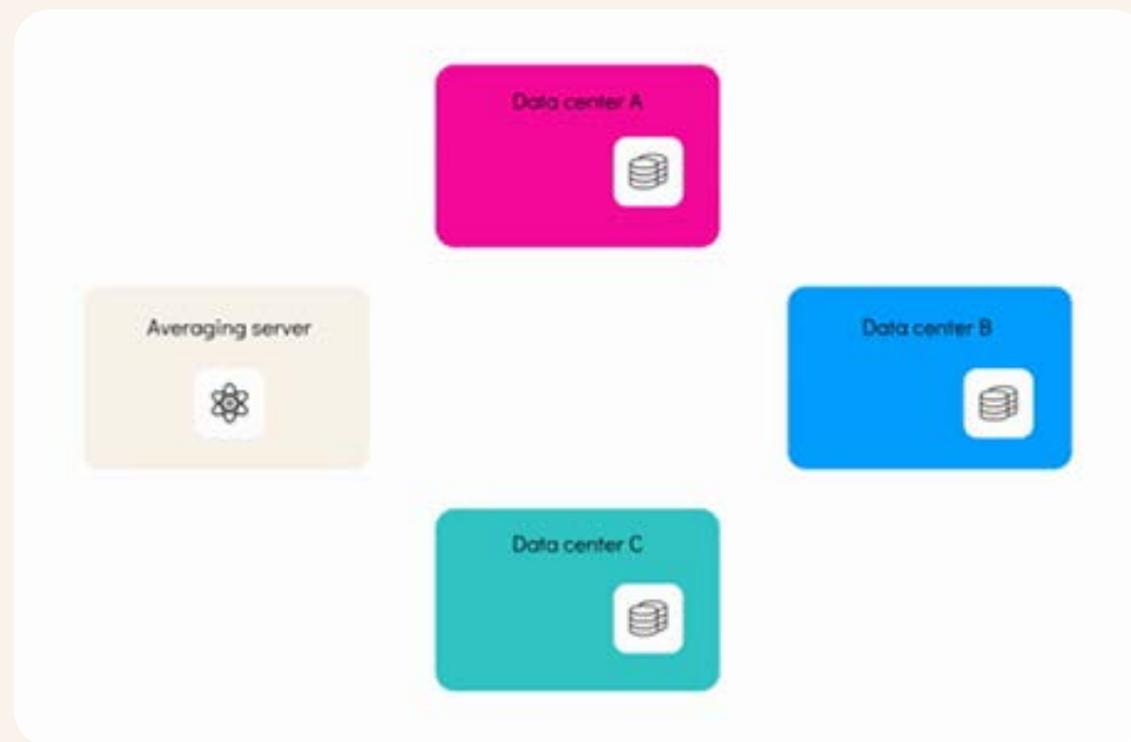
Melloddy IMI project - (June 2019-May 2022)

MELLODDY

Federated Learning for drug discovery

Goal: train common predictive models across **10 pharmaceutical companies** to improve their predictive power.

Constraint: ensure **privacy** and security of all datasets involved.

SME

Project leader & coordinator

powered by aws

PHARMA PARTNERS

AMGEN

astellas

AstraZeneca

BAYER

Boehringer Ingelheim

gsk

janssen PHARMACEUTICAL COMPANIES OF Johnson-Johnson

MERCK

NOVARTIS

SERVIER

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IKTOS

Kubermatic

KU LEUVEN

NVIDIA.

OWKIN

Substra Foundation

This project has received funding from the Innovative Medicines Initiative 2 Joint Undertaking under grant agreement N° 831472. This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation programme and EFPIA

imi innovative medicines initiative

efpia

Impact of Melloddy on Owkin

Proof point 1/3

Federated Learning is a new concept.

It needs validation in real life.

Impacts:

Technology proof point

Scientific proof point

MELLODDY
Meets Year One Objective

✓ World's first Federated Learning model for drug discovery trained at scale

MELLODDY

MELLODDY
Meets Year Two Objective

✓ Federated learning in drug discovery improves model performance

MELLODDY
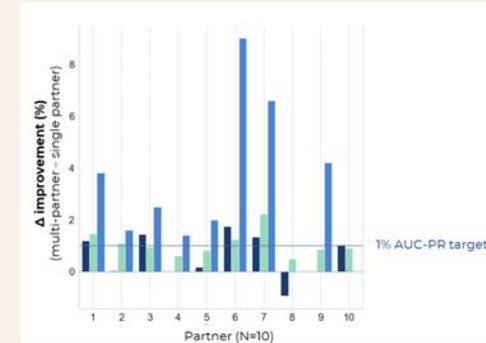
Year three is ongoing

Acculturation 2/3

Startup, academic and pharma cultures are very different. Working together is a skill.

Impacts:

Efficient collaboration

Grow network of (potential) customers

Industrialisation 3/3

Bringing Federated Learning
to this scale had never been
done before.
We had to prove our mettle.

Impacts:

Large scale implementation

Delivery oriented Organisation

Privacy / Security audits

Security assessment report of the
MELLODDY project: Source code security
audit (run 3)
Bayer Business Services GmbH

Version 1.0

cirosec
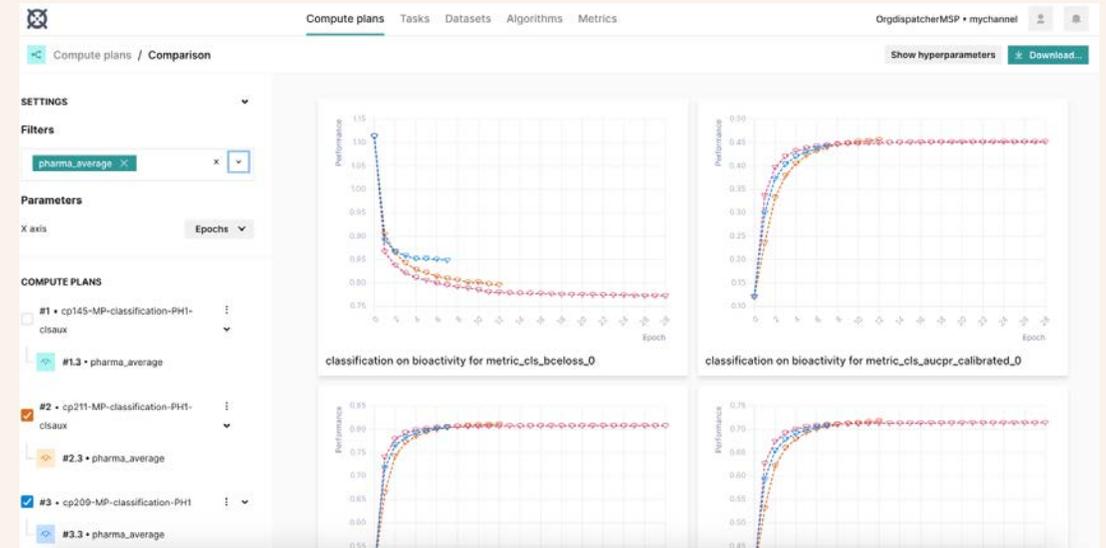
Overall, Melloddy helped us scale first