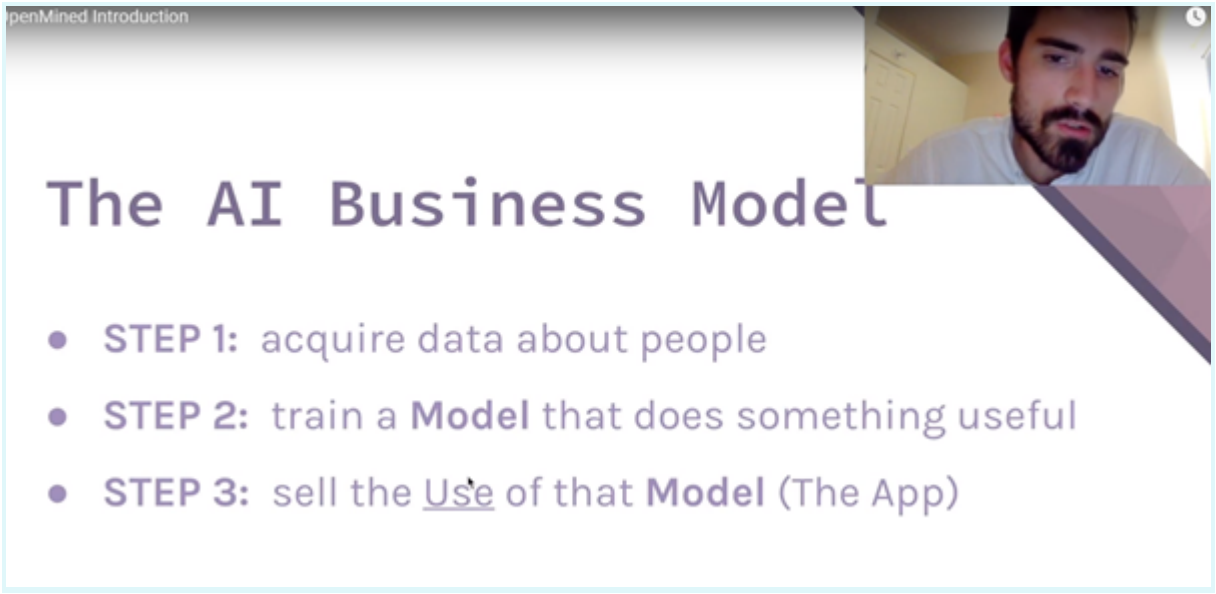
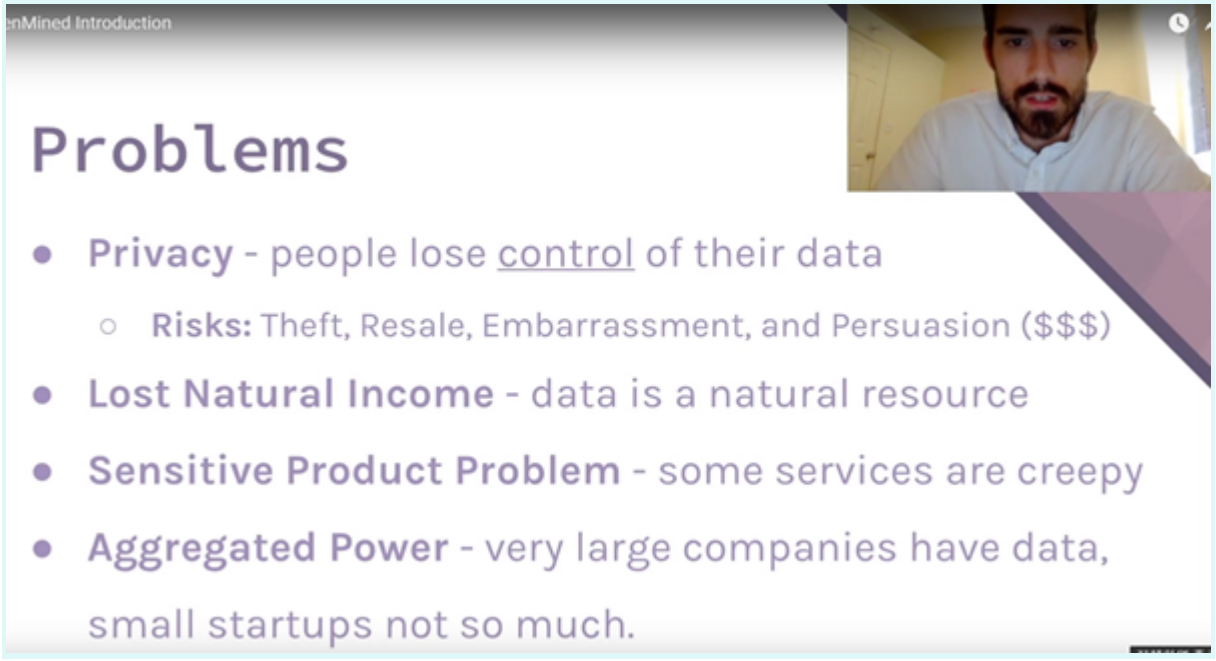
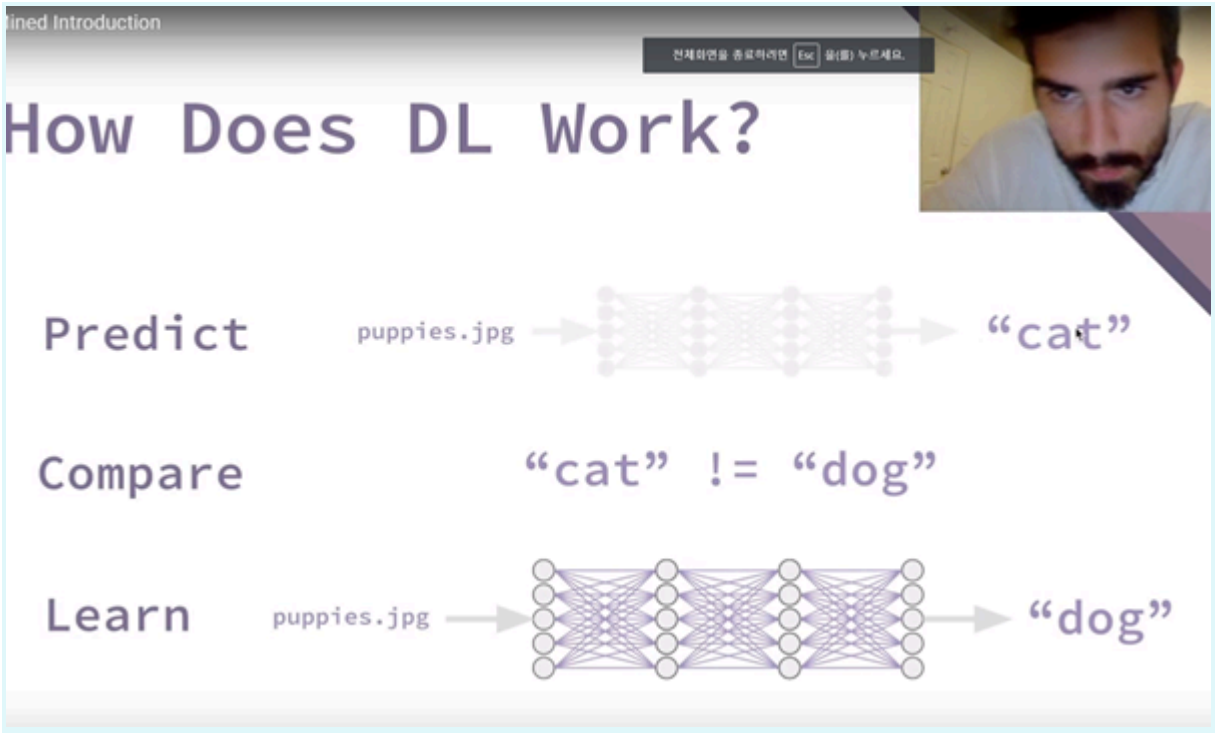
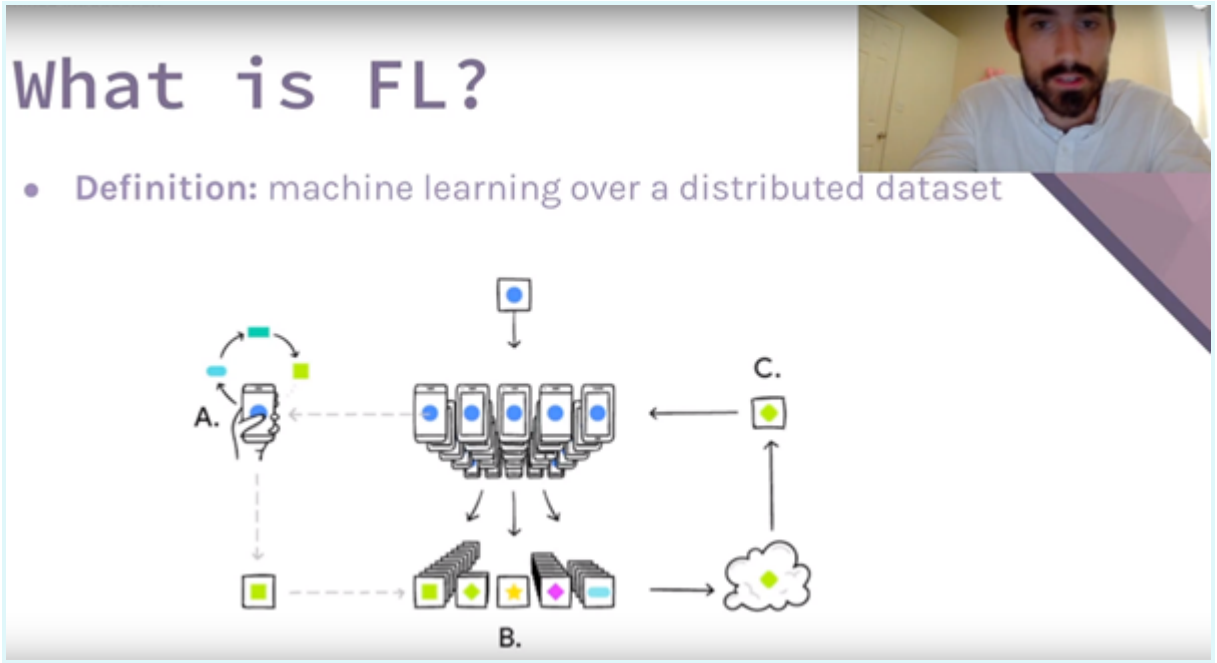
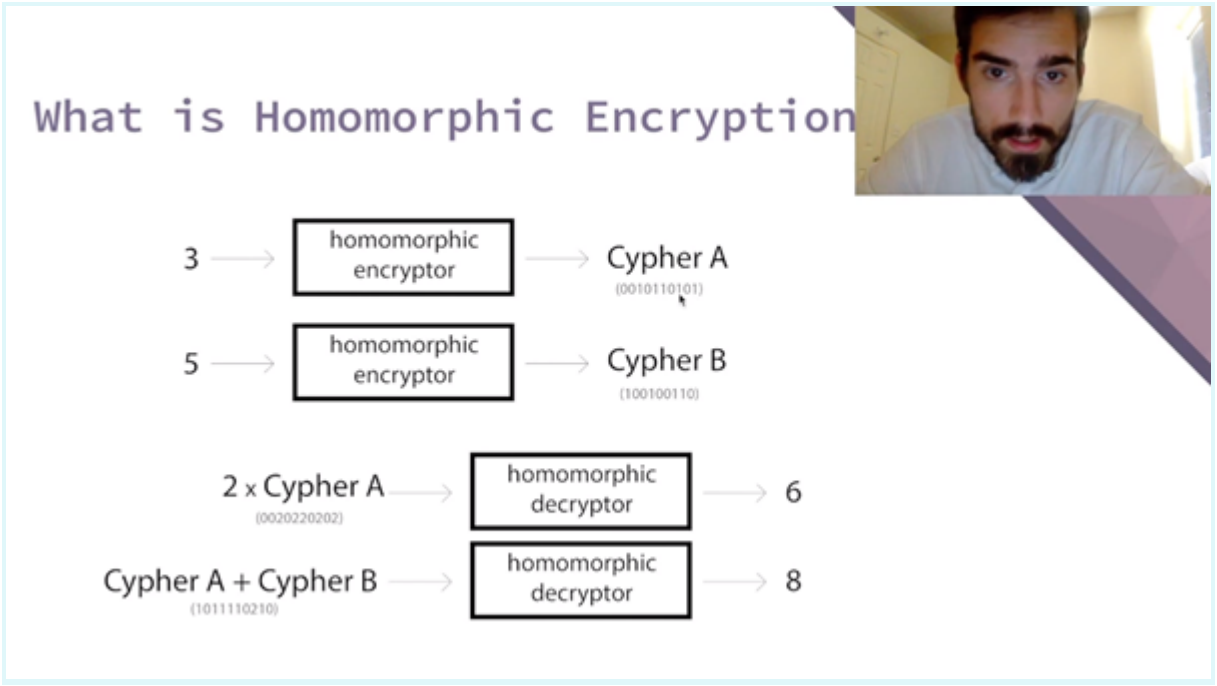
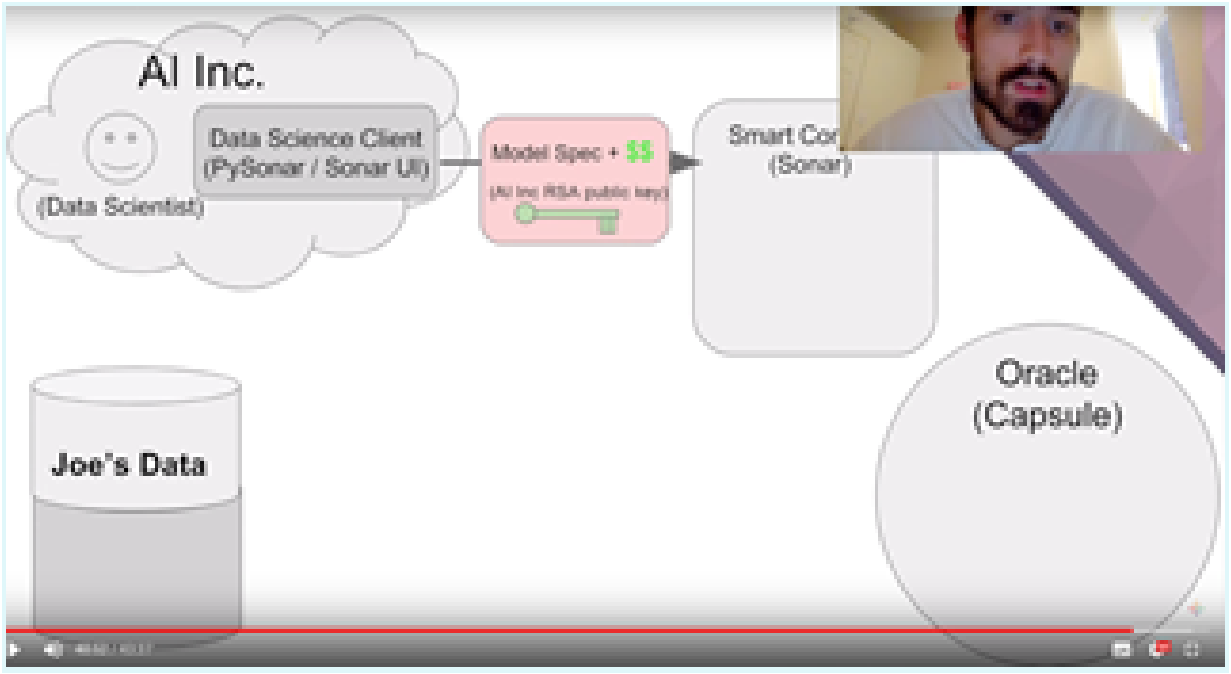

penMined Introduction
The AI Business Model
STEP 1: acquire data about people
STEP 2: train a Model that does something useful
STEP 3: sell the Use of that Model (The App)

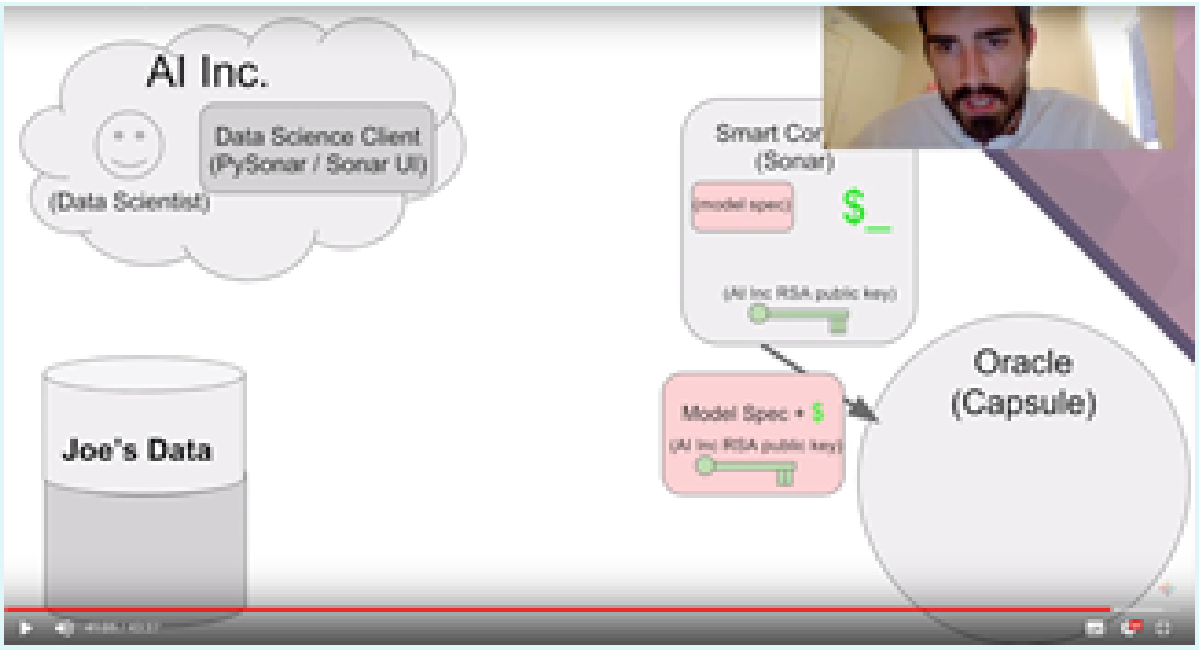

enMined Introduction
Problems
Privacy - people lose control of their data
Risks: Theft, Resale, Embarrassment, and Persuasion ($$$)
Lost Natural Income - data is a natural resource
Sensitive Product Problem - some services are creepy
Aggregated Power - very large companies have data, small startups not so much.

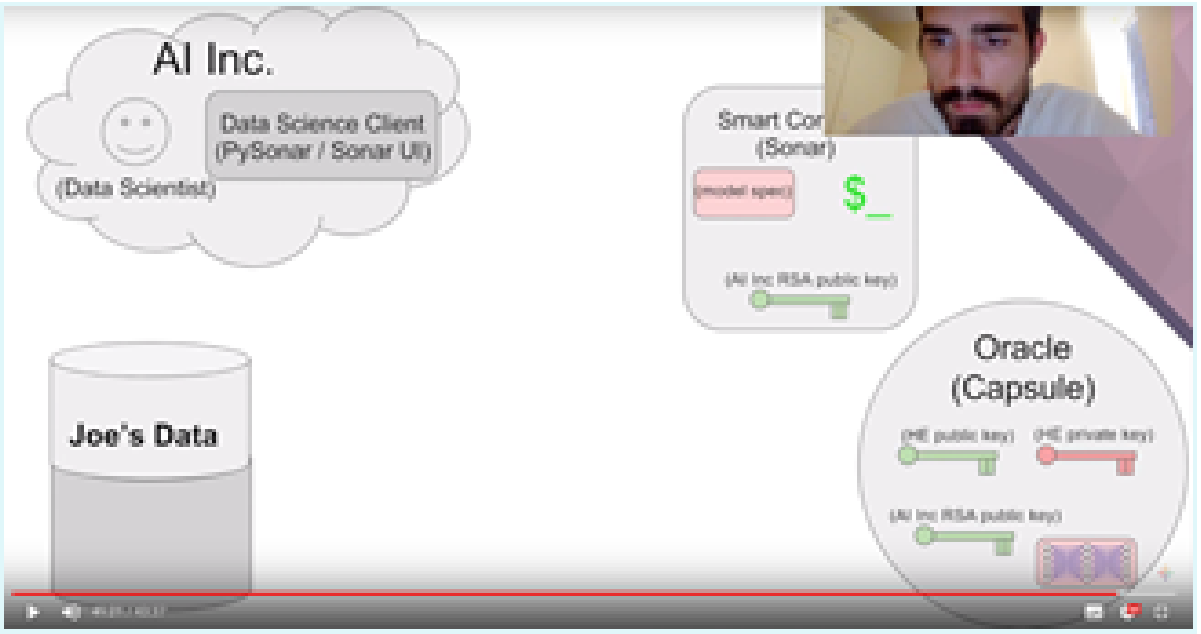

tined Introduction
How Does DL Work?
Predict
puppies.jpg
"cat"
Compare
"cat" != "dog"
Learn
puppies.jpg
"dog"

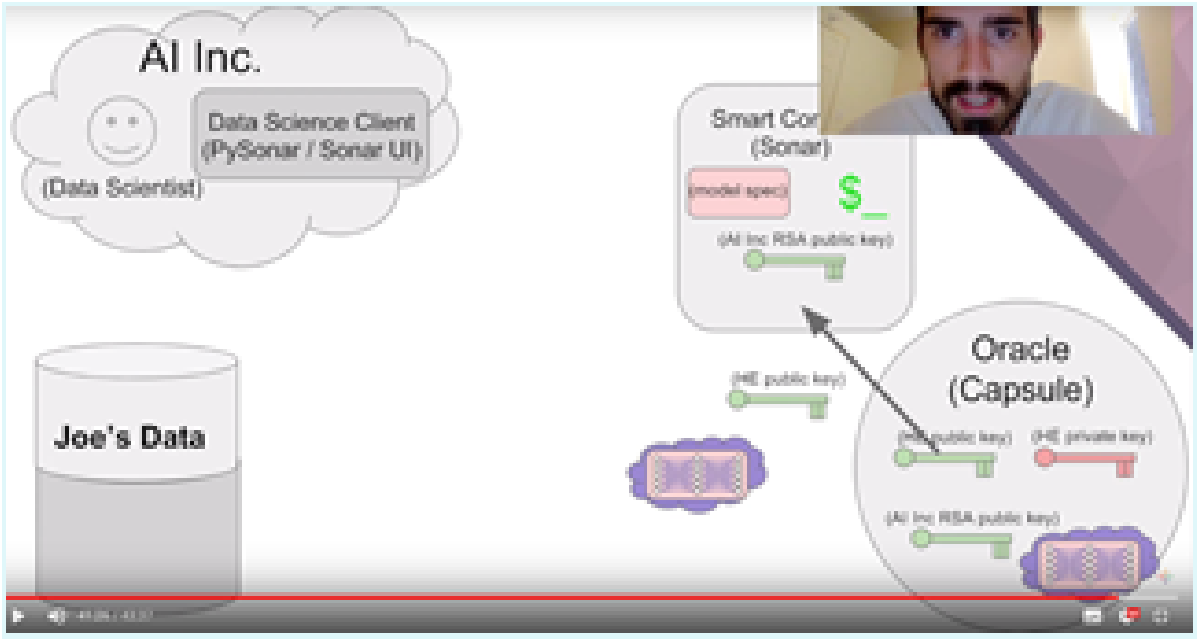

What is FL?
• Definition: machine learning over a distributed dataset
A.
B.
C.

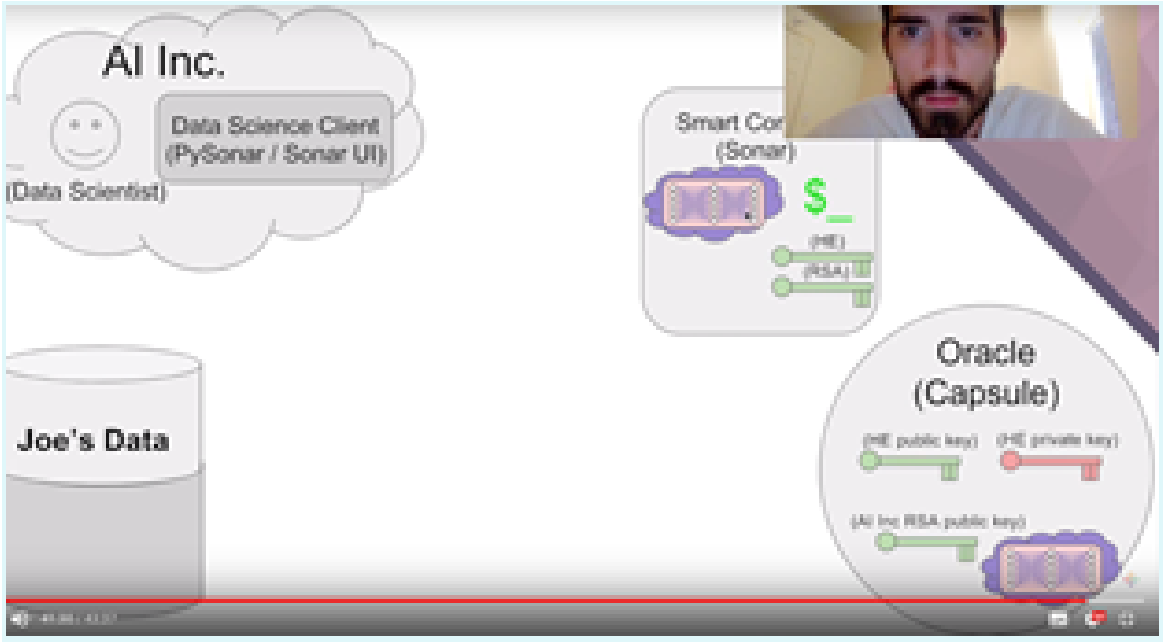

What is Homomorphic Encryption
3
homomorphic encryptor
Cypher A
(0010110101)
5
homomorphic encryptor
Cypher B
(100100110)
2 x Cypher A
(0020220202)
homomorphic decryptor
6
Cypher A + Cypher B
(1011110210)
homomorphic decryptor
8

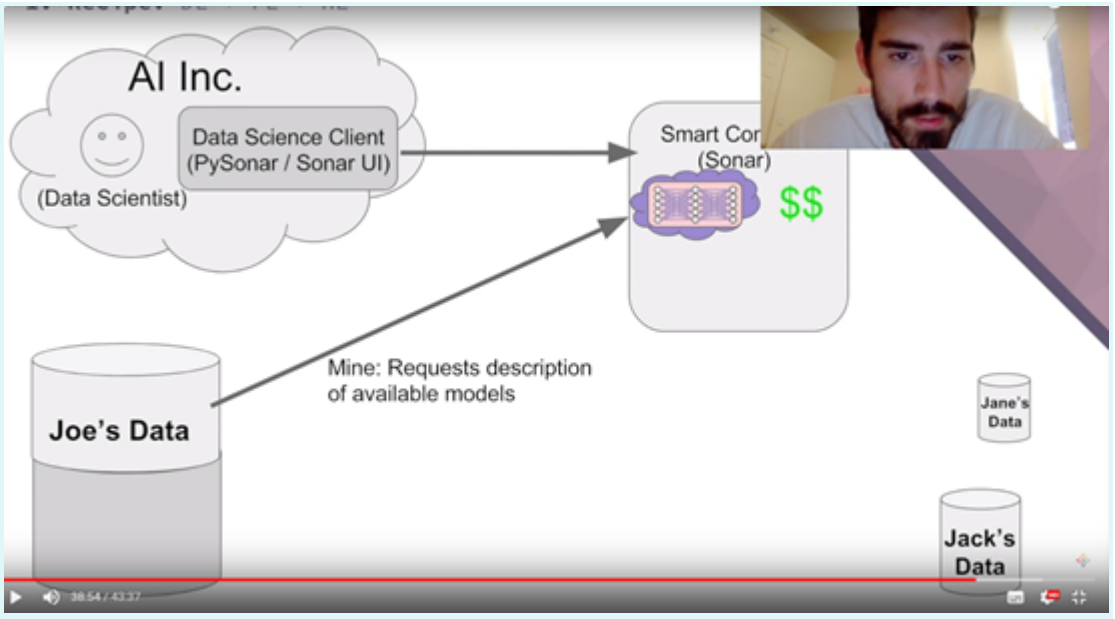

AI Inc.
Data Science Client
(PySonar / Sonar UI)
(Data Scientist)
Model Spec + $$
(AI Inc RSA public key)
Smart Co
(Sonar)
Oracle
(Capsule)
Joe's Data

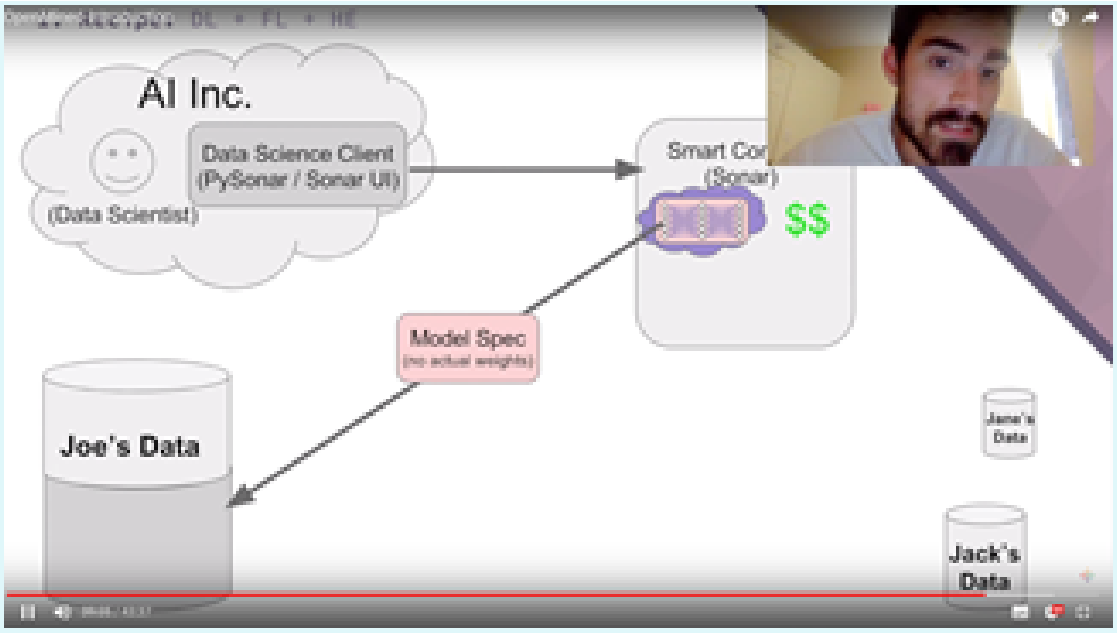

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$_
(AI Inc RSA public key)
Joe's Data
Model Spec + $
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(Capsule)

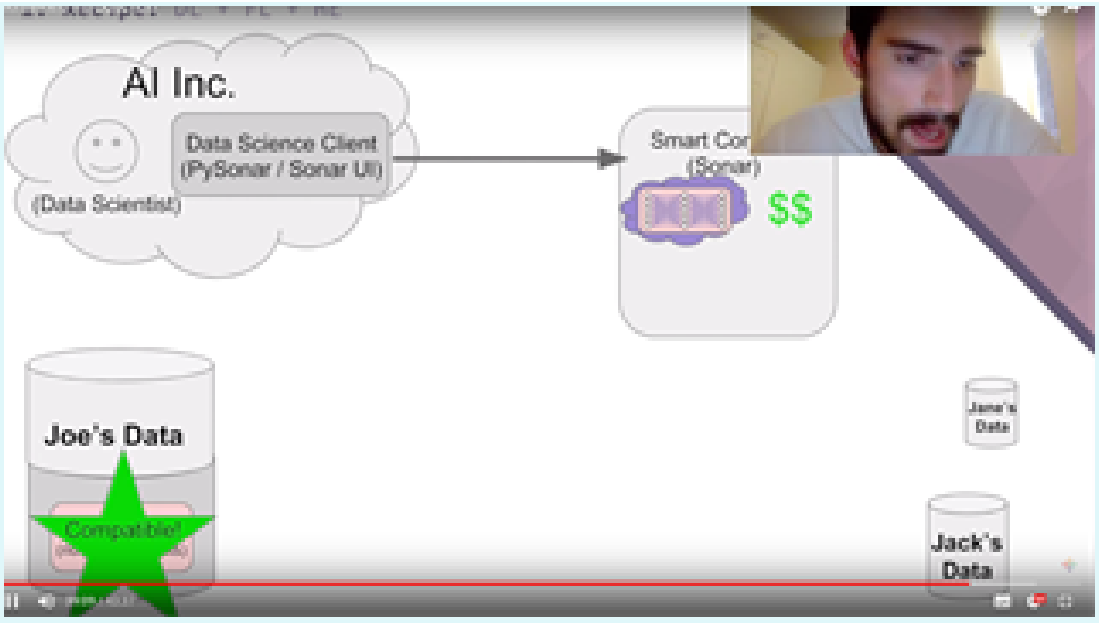

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(AI Inc RSA public key)
Joe's Data
Oracle
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(HE public key)
(HE private key)
(AI Inc RSA public key)

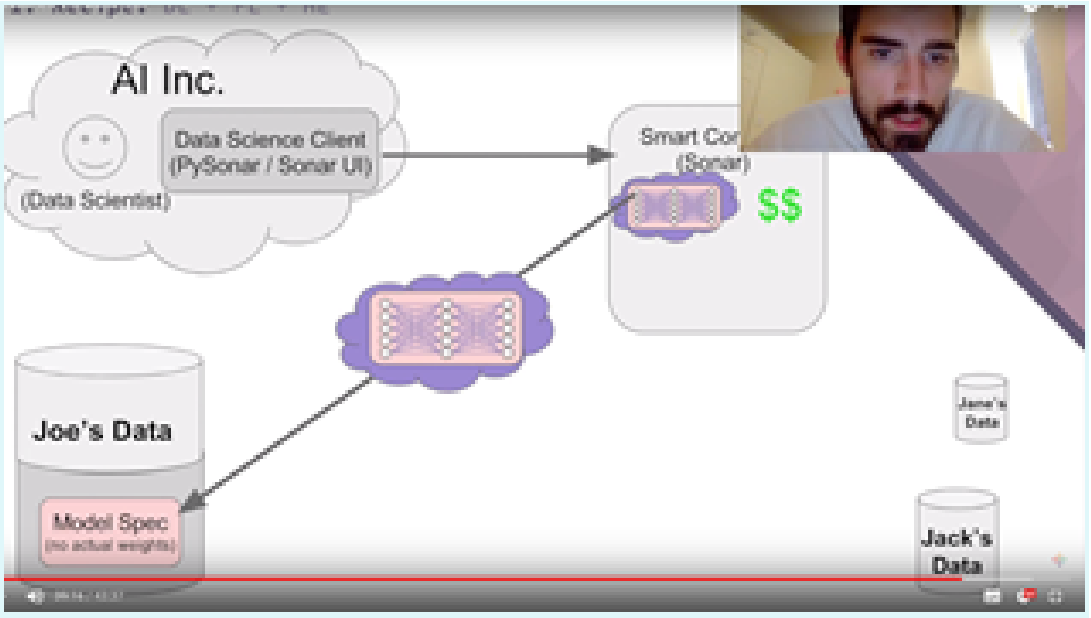

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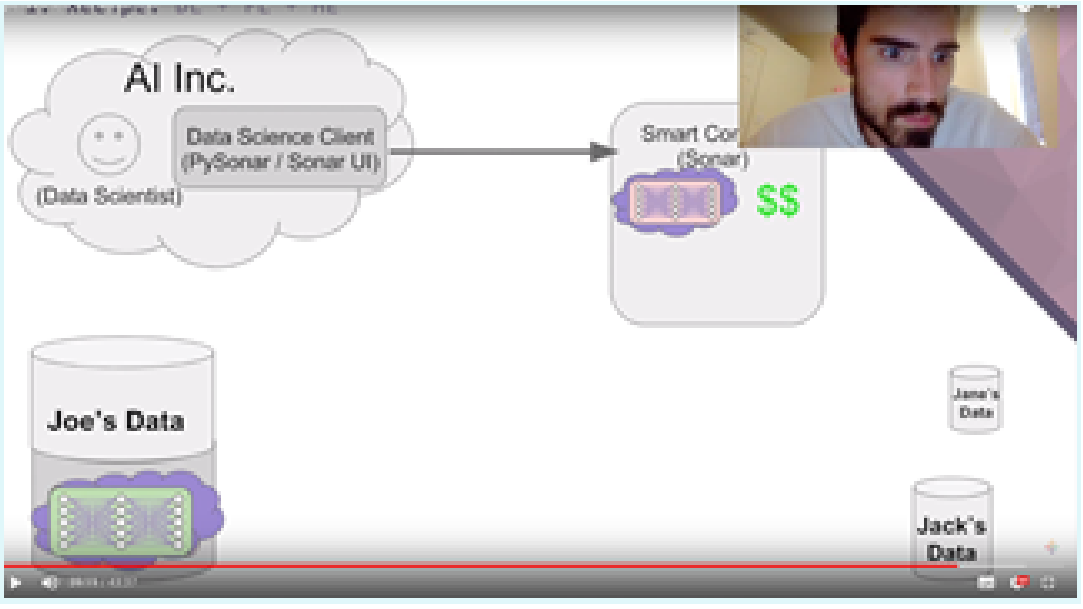

AI Inc.
Data Science Client
(PySonar / Sonar UI)
(Data Scientist)
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Oracle
(Capsule)
(HE public key)
(HE private key)
(AI Inc RSA public key)
Joe's Data

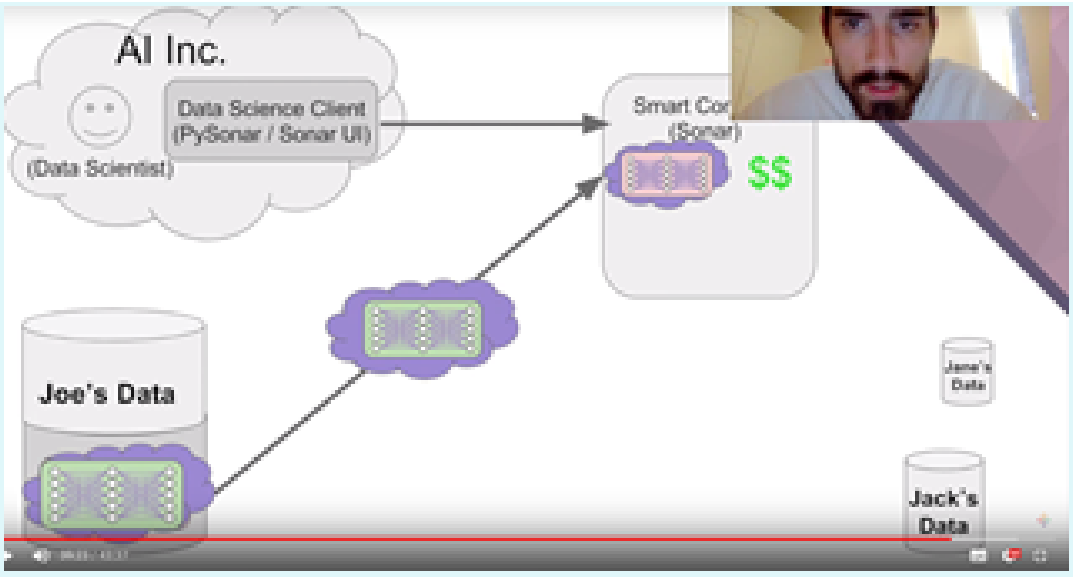

AI Inc.
Data Science Client
(PySonar / Sonar UI)
(Data Scientist)
Smart Con
(Sonar)
$$
Mine: Requests description
of available models
Joe's Data
Jane's
Data
Jack's
Data

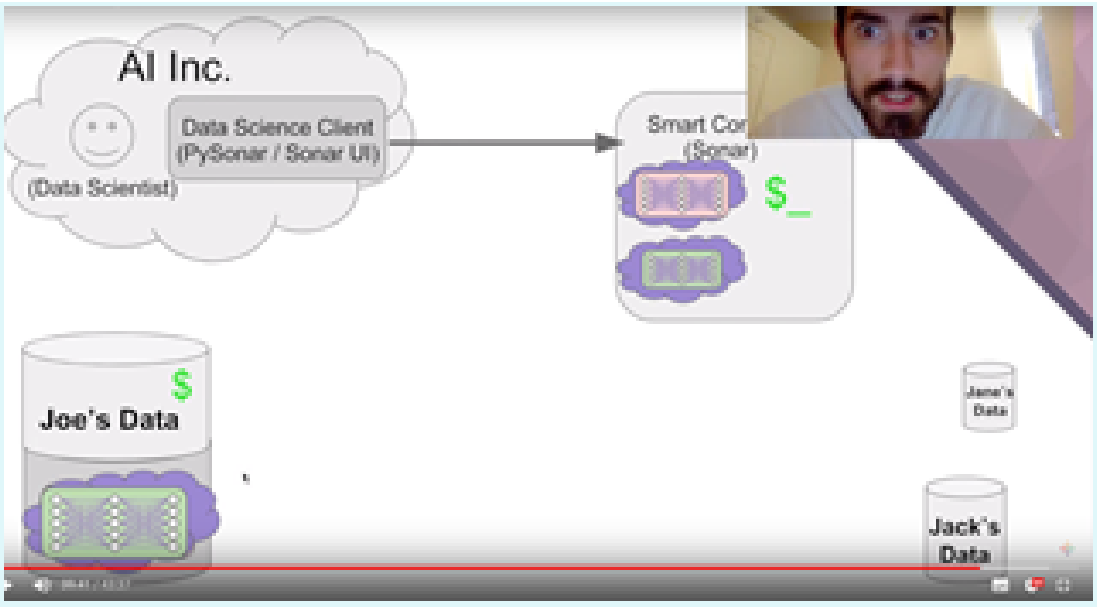

AI Inc.
Data Science Client
(PySonar / Sonar UI)
(Data Scientist)
Smart Con
(Sonar)
$$
Model Spec
Joe's Data
Jane's
Data
Jack's
Data


AI Inc.
Data Science Client
(PySonar / Sonar UI)
(Data Scientist)
Smart Cor
(Sonar)
$$
Joe's Data
Compatible!
Jane's Data
Jack's Data


AI Inc.
Data Science Client
(PySonar / Sonar UI)
(Data Scientist)
Smart Cor
(Sonar)
$$
Joe's Data
Model Spec
(no actual weights)
Jane's Data
Jack's Data


AI Inc.
Data Science Client
(PySonar / Sonar UI)
(Data Scientist)
Smart Cor
(Sonar)
$$
Joe's Data
Jane's Data
Jack's Data


AI Inc.
Data Science Client
(PySonar / Sonar UI)
(Data Scientist)
Smart Cor
(Sonar)
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Joe's Data
Jane's
Data
Jack's
Data


AI Inc.
Data Science Client
(PySonar / Sonar UI)
(Data Scientist)
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Joe's Data
Jane's
Data
Jack's
Data