



Federated learning infrastructure installed in Montreal CHUM - MUHC - SecureData4Health

Pascal St-Onge
Medical data science program manager
CHUM



NEPHROCAGE

German-Canadian consortium on AI for
improved kidney transplantation outcome
2nd International NephroCAGE Symposium, Aug 16, 2022



PIRCHE



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Genome
Canada



Genome
Québec



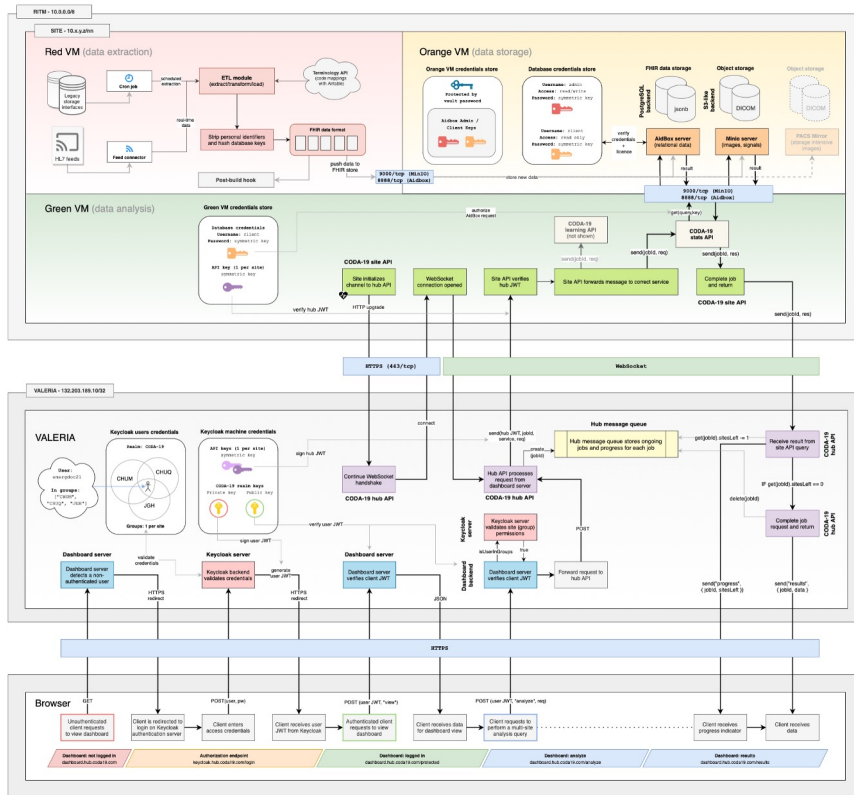
Genome
British Columbia

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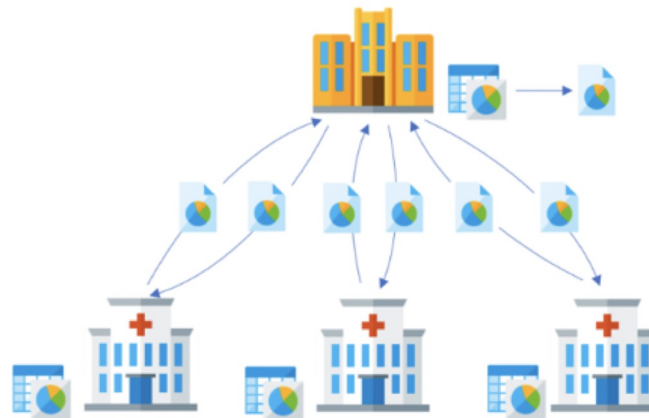


on the basis of a decision
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CODA federated learning platform



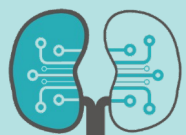
Federated



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Chart 2



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Digit Engineering - charité/HPI/Prüfung



Karlsruher Institut für Technologie



THE UNIVERSITY
OF BRITISH COLUMBIA



CHARITÉ
UNIVERSITÄTSMEDIZIN BERLIN



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Université
de Montréal



POLYTECHNIQUE
MONTREAL
UNIVERSITÉ
D'INGÉNÉRIE



CHUM



Genome Québec



Genome
Canada



Genome
British Columbia



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CODA characteristics

- Federated learning platform with central server
- Red virtual machine
 - data extracted from the hospital source systems
 - json format
 - labels mapped to medical ontologies
- Orange virtual machine
 - FHIR data repository
 - Orthanc (DICOM file server)
 - MinIO (other data type)
- Green virtual machine (Machine learning server)
 - TensorFlow
 - Redis.io

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CODA partners



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CODA data availability

	Demographic	Encounter	Laboratory	Diagnosis	Imaging Data	Medication	Procedure
CHUM	✓	✓	(✓)	✓	✓	✓	✓
CHUdeQc-UL	✓	✓	(✓)	✓	(✓)		
JGH	✓	✓	(✓)	✓	✓	✓	✓
MUHC	✓	✓	(✓)	✓	✓	✓	✓
CHUS	✓	✓	(✓)	✓			
CISSS-CA	✓	✓	(✓)	✓			
CISSS-NIM	✓	✓	(✓)	✓			
CHUSJ	(✓)	(✓)	(✓)	(✓)			

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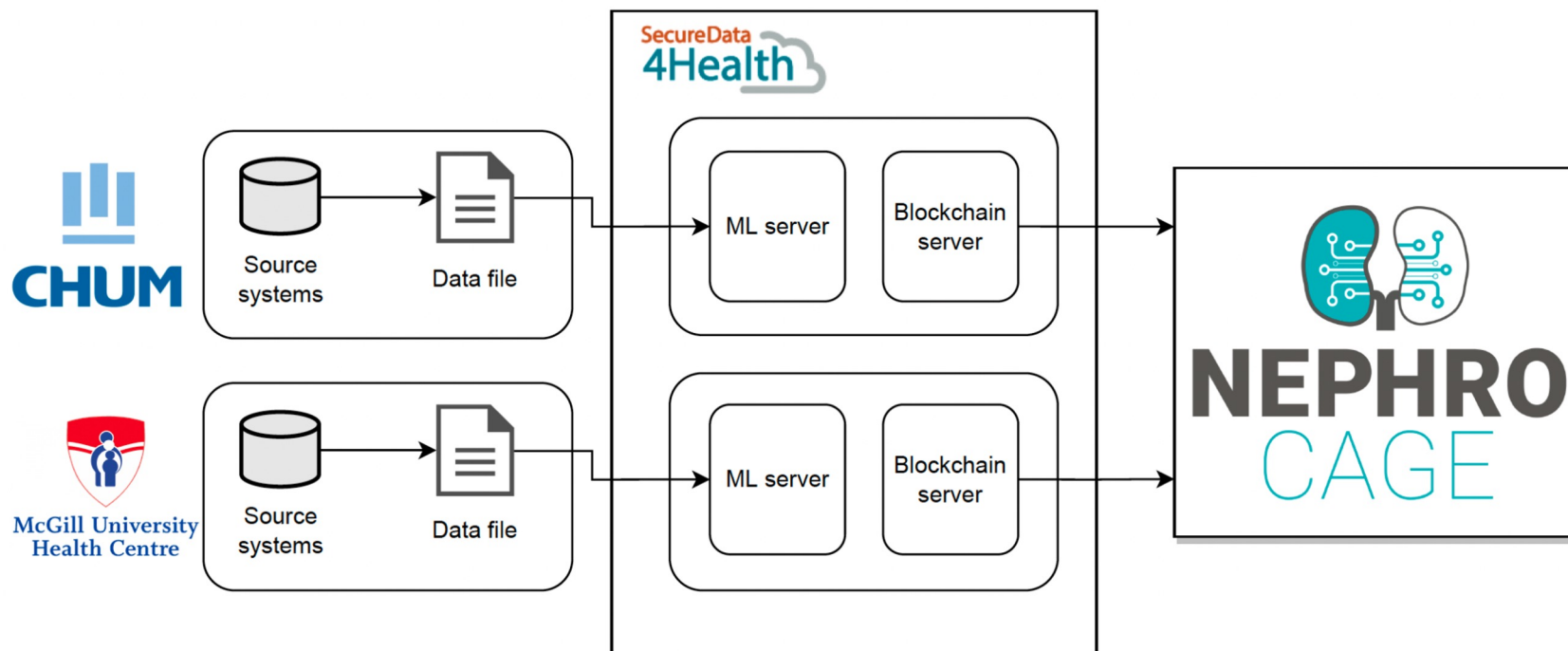


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Current state of MTL NephroCAGE implementation



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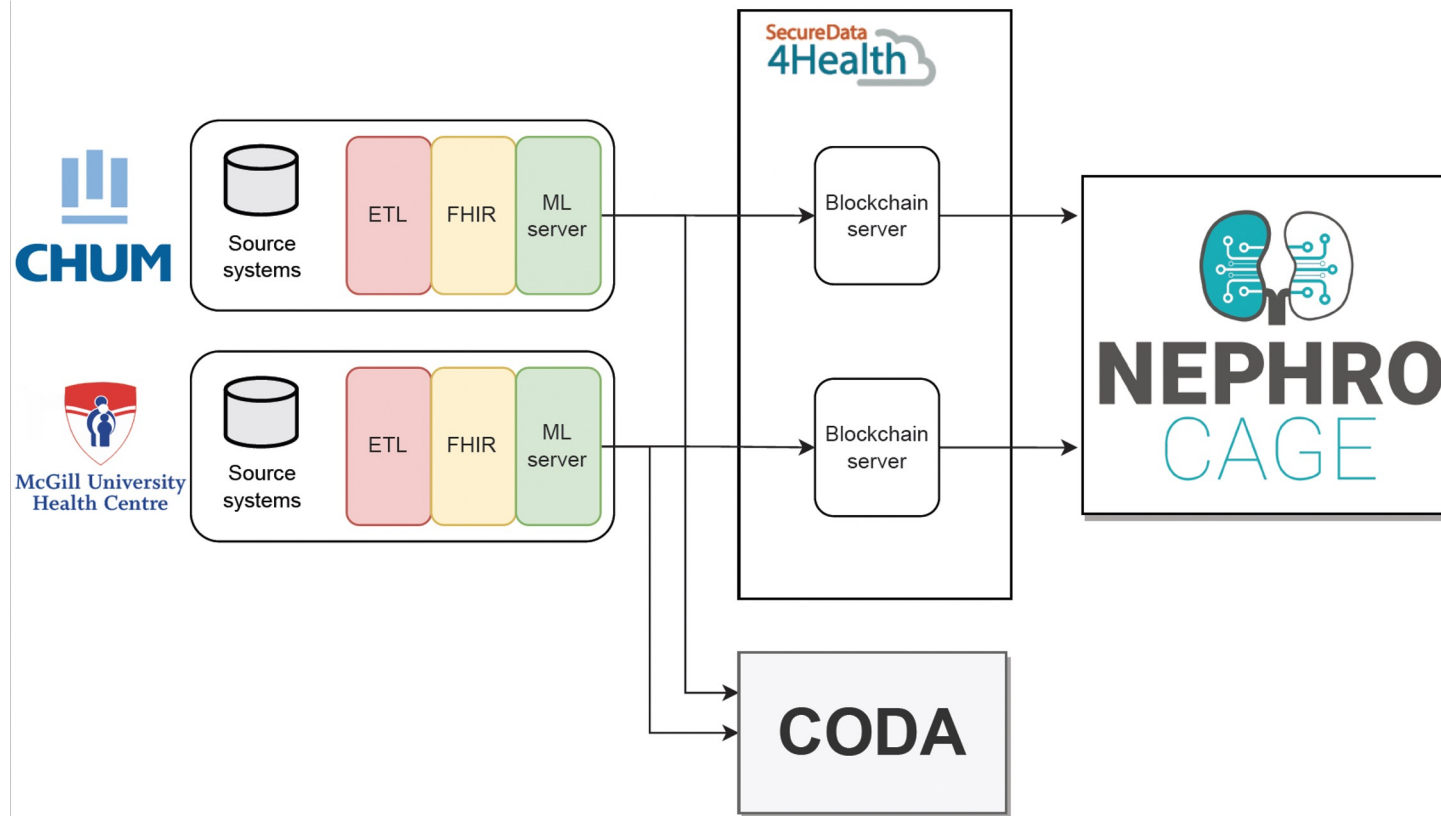


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Ultimate goal (MTL setup)



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