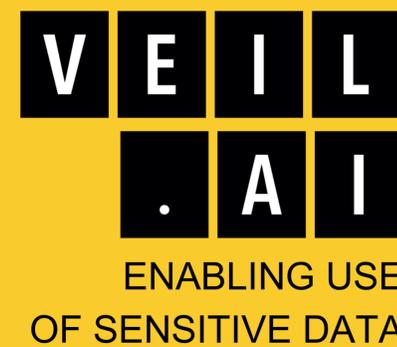


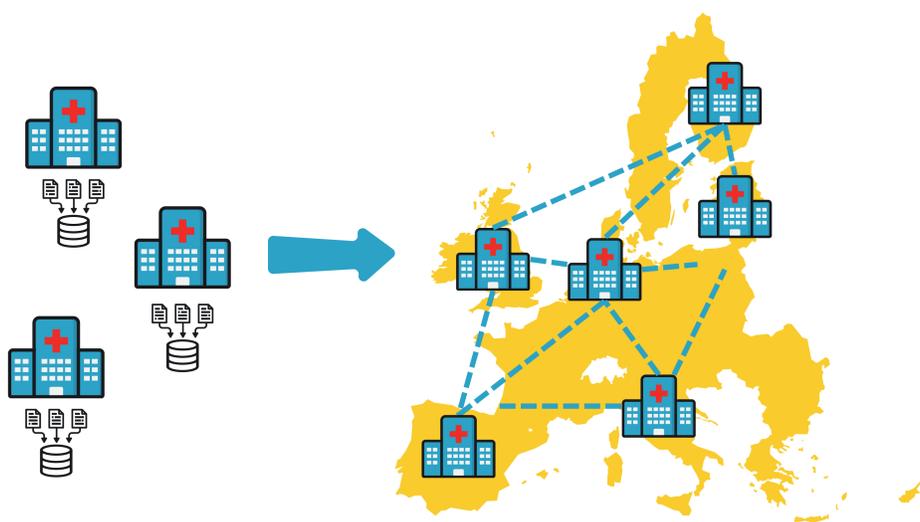
VEIL.AI's Next-Generation Anonymization enables cutting-edge research for children's diseases



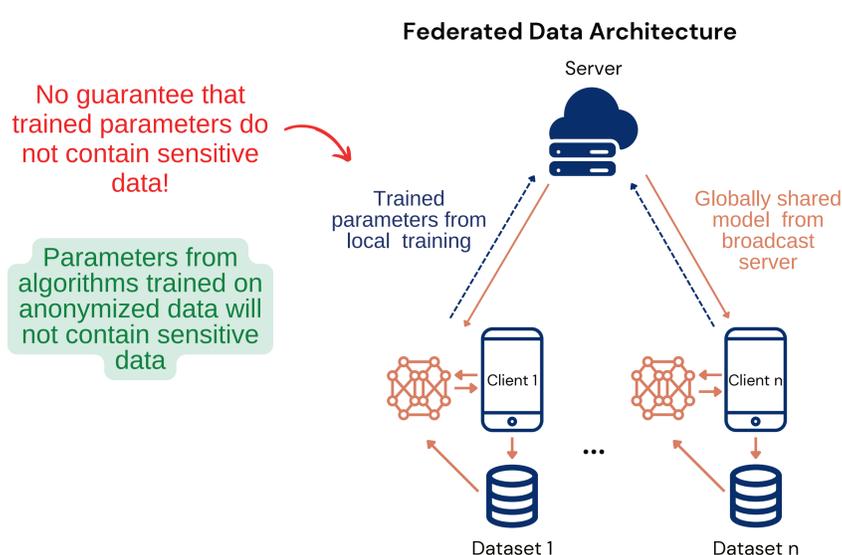
Enhancing Pediatric Care Data Collaboration through Privacy-Enhanced Federated Learning and/or Anonymization

Background: Health data siloed in hospitals is a barrier to better evidence-based healthcare for children. Increasing accessibility to health data in the PHEMS consortium aims to improve management of patient pathways for pediatric cardiac patients, predicting sepsis in pediatric intensive care, and in treating hemophilia in young patients.

Health data is siloed in hospitals. PHEMS enables access to health data for better healthcare



Next-generation anonymization enables secondary use of health data in both data sharing pipelines and federated architectures



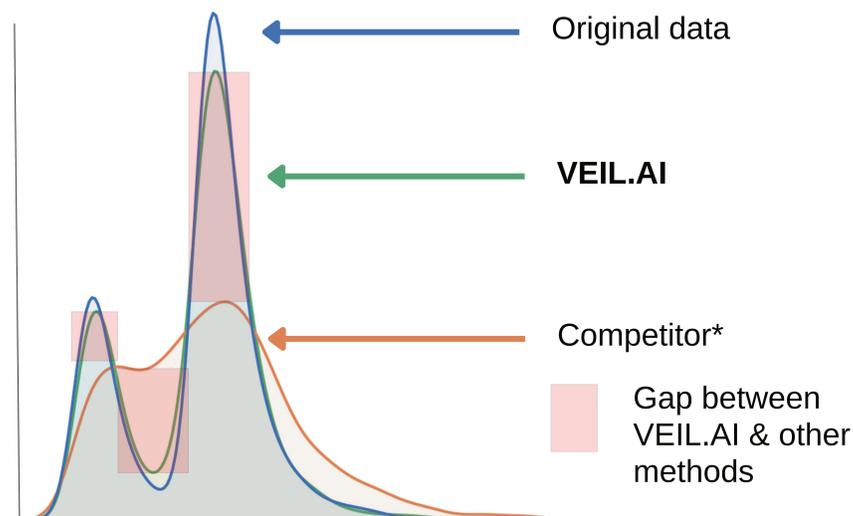
VEIL.AI's Next-Generation Anonymization is beyond-state-of-the-art, enabling secondary use of pediatric health data

Predicting 10 year probability of coronary heart disease with the Framingham dataset.

Case: Multivariate analyses Target: 'smoker' + 'TenYearCHD'	Mean accuracy		
	Original	Competitor*	VEIL.AI
Random Forest	0.818	0.620	0.784 (±0.034)
Decision Tree	0.715	0.540	0.647 (±0.068)
K-Neighbors	0.673	0.489	0.634 (±0.03)

The difference is not significant $p > 0.05$

- Old anonymization methods poorly predict CHD compared to original, pseudonymized data.
- VEIL.AI's Next-Generation Anonymized data predicts CHD just as well as the original, pseudonymized data.



Conclusions: VEIL.AI's on-demand Next-Generation Anonymization enables beyond-state-of-the-art accuracy and validity, enabling research for children's diseases that would be otherwise impossible and contributing to improved patient outcomes.

Citations:

Ma *et al*, "On safeguarding privacy and security in the framework of federated learning", IEEE Network (2020); Melis *et al*, "Exploiting unintended feature leaking in collaborative learning", ArXiv, 2018. Mehtälä *et al*. "Utilization of anonymization techniques to create an external control arm for clinical trial data." BMC Medical Research Methodology, 2023 Competitor: *Open source anonymization library.



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