BeeKeeperAI™

Rethinking Data Access

Securely & Ethically Leveraging Data to Advance Innovation

Status Quo No Longer Works

“An existential crisis exists for healthcare AI due to the inability to compute on PHI”

Healthcare delivery system data has never been more sought after nor at higher risk of attack. Validation, deployment, and ongoing monitoring of promising artificial intelligence and machine learning algorithms and analytics require access to real world, Protected Health Information (PHI). Current methods for making data commercially available typically require de-identification, which masks important real-world aspects of the data and requires significant time, effort, and expertise to de-identify (if even possible).

Yet, even after de-identification, the health system retains the risk of sanctions related to patient data re-identification. Additionally, de-identified data (and the related “synthetic data”) may not be sufficient to develop or validate generalizable, clinically actionable AI models. In addition, contracting and internal approvals can take from 9 to 18 months to complete which is no longer a viable timeframe for researchers or industry collaborators.

A Paradigm Changing Solution

BeeKeeperAI enables sightless computing on PHI within a health system’s secure Azure cloud environment – Neither the data nor the model is ever seen

EscrowAI™ is a zero-trust, confidential computing platform that facilitates sightless computing on PHI. With EscrowAI, health systems keep their PHI in their secure, HIPAA compliant Azure cloud environment but can participate in healthcare AI development. Here’s how EscrowAI enables a secure collaboration between a health system and third-party algorithm owner:

Health System	Researcher / 3rd Party Algorithm Owner
• Receives a project request and agrees to participate • A data specification for the project is provided by the requesting third-party • A curated PHI data set for a project is encrypted and placed in the health system’s HIPAA compliant Azure Cloud ***The data is never seen nor shared.***	An algorithm or query is encrypted to protect the model’s intellectual property and is brought via an EscrowAI confidential compute node to the data steward’s HIPAA compliant Azure Cloud. ***The algorithm intellectual property is never seen nor shared.***
The encrypted data set and encrypted algorithm are placed into a secure computing enclave, operating in the health system’s HIPAA Azure Cloud where they compute in a sightless, secure enclave. ***No one can view the data or the model.***	A health system approved confidential meta-data summary and algorithm performance report leaves the secure enclave and is delivered to the researcher/algorithm owner. ***Only the report leaves the secure computing enclave.***

Data Steward Benefits

BeeKeeperAI improves data security and simplifies workflow

EscrowAI allows health systems to pursue their mission by participating in research or industry sponsored AI projects involving PHI without placing the patient’s data at risk or burdening their internal technical and security resources.

- Secure: Lowest cyber-attack surface on the market, Zero Trust
- Supports Multiple Business Use Cases: Including ethical data licensing
- Agnostic: Enables all types of data and algorithms/queries to compute
- Streamlines Administration: Reduces contracting and approval timelines by 50-60%.
- Supports R & D Workflows: Artifact preservation

For More Information

BeeKeeperAI is a spin-out of the University of California, San Francisco’s Center for Digital Health Innovation where the founding team learned first-hand the challenges facing health systems seeking to advance innovation while optimizing data security. EscrowAI, is a SaaS application hosted on the Microsoft Azure infrastructure.

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