dicom systems

Data Distributing
the Image Distribution People

On-Ramp to AI Research and Innovation

DE-IDENTIFICATION

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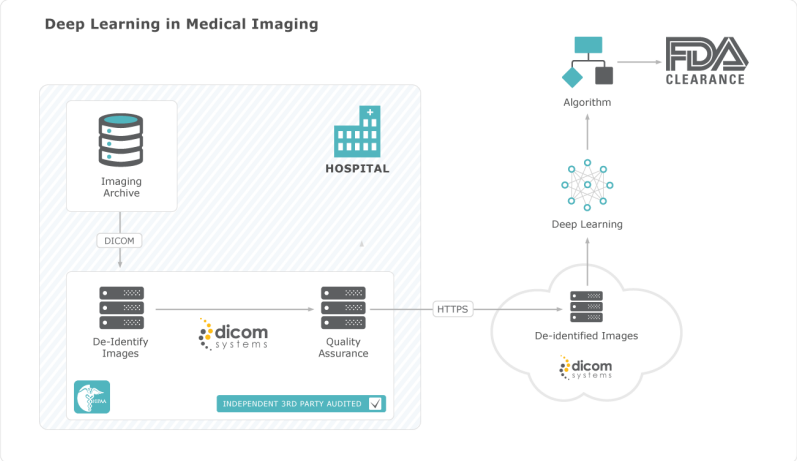
By 2020, imaging studies in the U.S. alone will account for 2.4 exabytes of data (source: IDC), presenting a unique opportunity for biomedical researchers to uncover the next healthcare breakthrough. Safe Harbor methodology requires 18 PHI identifiers to be masked or removed—making data preparation a complex undertaking. To combat these vulnerabilities, biomedical studies must be de-identified in such a way that it can still be of value to researchers without revealing patient identity. Dicom Systems offers a proven and scalable de-identification toolset that unlocks valuable imaging studies for areas such as research, policy assessment, and comparative effectiveness studies.

Consumption of high quality data by deep learning applications is an essential contribution to better machine learning algorithms, unleashing tremendous potential for AI solutions that benefit patient care.

THE DICOM SYSTEMS ADVANTAGE

- Proprietary framework takes HIPAA Privacy Rule, Safe Harbor methodology compliance to a new level
- Supports full DICOM and HL7 interoperability with all compliant devices
- Best price-to-performance technology trusted by top healthcare enterprises, government agencies, and imaging partners
- When deployed in conjunction with Dicom Systems Enterprise Imaging Unifier VNA, leverages robust framework for imaging lifecycle management and archiving



Dicom Systems Unifier platform is available in flexible deployment options—on-premise, private cloud, hybrid cloud, and leading cloud providers

FEATURES

- Capacity to implement complete de-identification framework from data preparation and migration to building a data lake
- Bi-directional dynamic tag morphing makes changes on input and output
- Advanced pixel-level de-identification while avoiding accidental corruption or truncation of the image file
- Complex DICOM tag substitutions, removals or morphing are automated by designing transformations into LUA script
- Full customization of de-identification processes and output

CUSTOMER CASE STUDY

Leading Specialty Hospital in New York

Completion of a large-scale imaging data de-identification and migration project intended for machine learning while ensuring enterprise-class security and HIPAA compliance presented Dicom Systems with a unique set of variables: complex de-identification criteria, technical constraints of on-premise IT solutions, performance limitations, security and privacy compliance—all amidst a public cloud environment and regulation. The hospital's goal was to securely share their diverse and voluminous clinical dataset with entities conducting machine learning-based biomedical research. The foremost requirement was strict adherence to privacy regulations verifiable under the scrutiny of a third-party auditor. To further optimize patient care outcomes, the de-identified data-set needed to be normalized and targeted for efficient ingestion. Finally, the hospital needed Dicom Systems to execute on a data migration process that required a secondary QA function for verification, as well as an independent third party audit, before the de-identified exams could be safely released outside of the hospital's firewall.

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OUTCOMES WITH DICOM SYSTEMS

Data lake of 5.3 million safely de-identified exams utilized for machine learning and refinement of algorithms.

As of May 2018, the project was awarded FDA pre-market clearance for AI as a computer assisted detection and diagnosis software in radiology.