

Synth Studio

Monetizing Data with Total Trust and Privacy

The value of data is multi-dimensional and limitless. From creating new products and services to personalizing existing ones for enhanced customer experience, or improving processes and productivity, the possibilities are endless. Amidst opportunities, there is one vital and non-negotiable requirement – all avenues of data monetization must be founded on total trust and privacy. The continuous journey of innovation calls for data sharing with privacy, protection and meticulous governance.

Synthetic Data — High on Quality, Higher on Trust

Mphasis Synth Studio is a patent-pending enterprise synthetic data generation solution that generates high-quality synthetic data to monetize trustworthy business insights while preserving privacy and protecting data subjects. Its AI-generated synthetic data enables organizations to leverage data's maximum potential to cross-collaborate and build reliable and highly accurate assets with no or minimal loss of data privacy and utility.

Comprehensive Data Synthesis

Mphasis Synth Studio accelerates innovation by enabling organizations to build and create realistic artificial datasets through intelligent machine learning (ML) processes and models.

The solution comprises two effective components — Data Synthesis and Data Enrichment.

Data Synthesis

Data Synthesis leverages Artificial Intelligence (AI) to create artificial data from the available representative original data or meta-information about the data. This has two scenarios:

Privacy-preserving synthetic data generation

- Synthetic data generated as a totally privacy-safe version of the original data
- Unleashes maximum utility for insights
- Statistical properties and distributions of original data preserved

Expert-assisted synthetic data generation

- Deployed when a representative sample of the original data is not available
- Creates synthetic data with the help of an expert's assistance, based on metadata, constraints and conditions
- Covers a wide range of requirements including application testing, creation of POCs, fueling hackathons and innovation initiatives

Data Enrichment

Data Enrichment is used to augment available data with more information to enhance its contextual utility and unlock innovation according to organizational requirements.

Synth Studio accelerates data-driven innovations through a joint synthesis of data and annotations, thus reducing the cognitive burden of maintaining data consistency in data preparation. It also synthesizes multi-modal data for consistently enriched data across multiple data modes, for example, x-rays with radiology reports, 3D MRI synthesization, damaged packages with assessment reports, generating tags along with images, sentiment tags for text reviews, etc.

An Array of Rich Features

Synth Studio's versatile range of features addresses the gamut of requirements for synthesizing data with speed, efficiency, scale and security.

Auto-synthesization

- In-built integration of generative methods with other privacy strategies (such as differential privacy, data anonymization, etc.)
- Intelligent selection and synthesis of data based on user requirements and metadata

Enhanced privacy protection and measurement

- Efficient model inversion to relentlessly protect the privacy of data subjects from adversarial attacks
- 'Privacy at Risk' measurement framework to rapidly identify and mitigate potential risks that synthetic data can expose

Conditional synthesization

- Synthesizes data based on conditions and constraints declared by the user
- Constraints in tabular data defined at a single-attribute level and across multiple attributes

Rare-event synthesization

- 'Up-samples' rare event data in cases of limited data (such as events of financial fraud and crime), and trains ML models to detect such scenarios better
- Protects information on minority data patterns using various ML strategies, based on user feedback

Close integration with downstream requirements

- Customizes the synthesization process based on the clearly defined purpose of downstream activities
- Integrates privacy metrics, synthetization methods and processes based on the type of dataset and nature of downstream data usage

Expert-assisted data generator

- AI/ML-augmented data synthesizer enables the creation of synthetic data according to expert-defined cross-attribute relationships and constraints
- Offloads the cognitive burden of managing the rules engine
- Synthesizes multiple tables (primary and foreign keys) for tabular data, while maintaining relational coherence
- Supports diverse data structures and formats (network, image, text, etc.)

Evaluation metrics for confident utilization

Synth Studio provides statistical metrics and intuitive visualization to compare the generated dataset and the original dataset. This visibility gives organizations and users the confidence to use synthetic data for business insights and downstream analytics.

Powerful Business Outcomes and Advantages

Mphasis Synth Studio's versatile advantages deliver privacy-safe data alternatives across industries and functions.

Data privacy

Data-sharing with minimized privacy issues and with zero or very low risk of exposing consumer information.

Signal preservation

By removing statistical relationships and references in the original data, Synth Studio significantly minimizes the need for masking and anonymization to protect data. Only data patterns and correlations are preserved for efficiency.

Data monetization

Synth Studio makes data available and usable for extracting insights that are otherwise inaccessible due to data constraints. This facilitates accurate decision-making in monetizing data for winning outcomes.

Speed of innovation

Synth Studio's AI/ML-driven features generate synthetic data at rapid speed to drive quicker innovation and place organizations ahead of the competitive curve.

About Mphasis

Mphasis' purpose is to be the "Driver in the Driverless Car" for Global Enterprises by applying next-generation design, architecture and engineering services, to deliver scalable and sustainable software and technology solutions. Customer centricity is foundational to Mphasis, and is reflected in the Mphasis' Front2Back™ Transformation approach. Front2Back™ uses the exponential power of cloud and cognitive to provide hyper-personalized ($C = X2C^2 = 1$) digital experience to clients and their end customers. Mphasis' Service Transformation approach helps 'shrink the core' through the application of digital technologies across legacy environments within an enterprise, enabling businesses to stay ahead in a changing world. Mphasis' core reference architectures and tools, speed and innovation with domain expertise and specialization, combined with an integrated sustainability and purpose-led approach across its operations and solutions are key to building strong relationships with marquee clients.

[Click here](#) to know more. (BSE: 526299; NSE: MPHASIS)

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