



realgen Synthetic Data Generator

we empower innovation with advanced data generation solutions.

realgen

What Is Synthetic Data?

Developing AI models often hinges on access to vast amounts of high-quality, diverse, and well-labeled datasets. However, in practice, acquiring such datasets can be a major bottleneck due to their scarcity, restrictions, or high cost. Traditional methods of collecting and annotating real-world data are not only time-intensive but also expensive, hindering the speed of AI innovation.

Synthetic data provides an innovative solution by creating artificial datasets through techniques such as computer simulations and generative AI models.

This data spans various formats, from text to high-fidelity 2D and 3D visuals, and even non-visual modalities. By supplementing or replacing real-world data, synthetic data enables faster training, reduces costs, and facilitates the development of robust multimodal AI systems.



Why realgen?

We offers a cutting-edge synthetic data solution built on a custom-developed 3D mapping engine seamlessly integrated within Unreal Engine. This enables unparalleled flexibility and precision in generating training data tailored to your needs.

Dynamic Object Generation

Easily create and manipulate a wide variety of objects to match specific requirements.

Environmental Customization

Simulate diverse environments by altering conditions such as lighting, weather, and terrain to replicate real-world scenarios.

Realistic Situations

Recreate complex or hazardous scenarios safely and efficiently, producing high-quality datasets for training AI models.

By harnessing these capabilities, our generator accelerates AI development while reducing the costs and challenges associated with traditional data collection. It is an ideal solution for the military industry that requires robust, scalable, and unobtainable training data.



M2020 EO



M2020 WAV EO



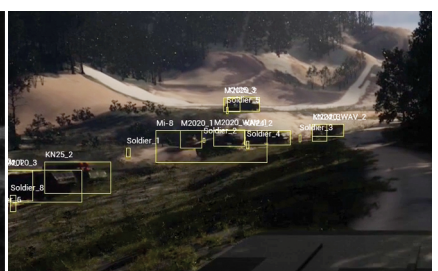
128ch. KN25 LiDAR



KN24 EO



M2020, Solider IR



Vehicle EO

High-Quality 3D Assets

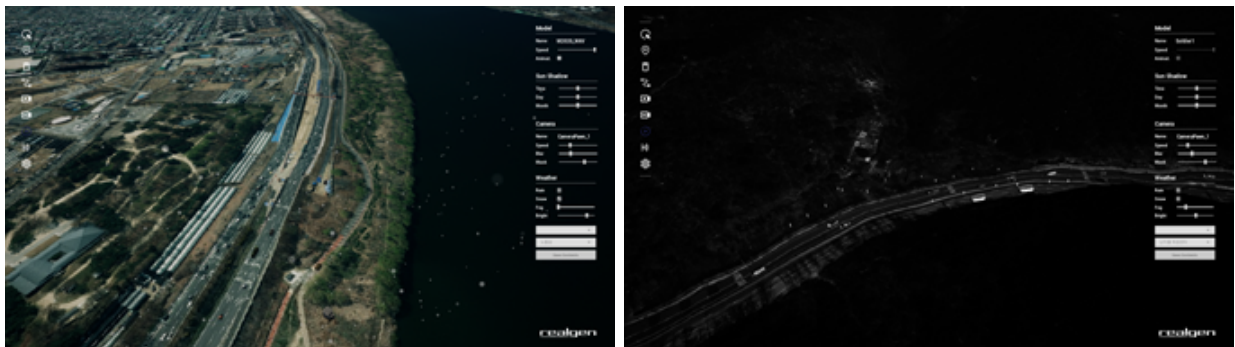
Major weapon systems such as the M2020, KN24, KN25, Mi-8, Hwasong-18, M2020 Multi-Purpose Armored Combat Vehicle, and the new 240mm multiple rocket launcher have been precisely modeled to closely resemble their real-life counterparts through thorough research and verification.



EO/IR Synthetic Data

Our synthetic data generator specializes in generating high-quality Electro-optics (EO) and Infrared (IR) datasets, leveraging our 3D map engine to tailor them to your specific needs.

Whether you need data for close range, durability, or some compensation, our solutions inside allow you to create synthetic EO and IR data to spice up your AI training and make your models perform well.



EO Synthetic Data

- Users can move to a desired location, create objects, and generate various EO image data by adjusting weather and lighting conditions.
- Users can directly set the movement path of objects (Direction of Attack, DOA), enabling the creation of realistic scenarios.
- Multiple cameras can be created to generate data from user-specified angles and positions (Angle of Approach, AOA).

IR Synthetic Data

- IR image data can be generated using a custom shader based on the thermal energy emitted during object movement.
- IR scenes can also be generated for objects and targets in concealed or covered states under various mission environments.

realgen 3D Mapping Engine

At Realgen, we've developed our own cutting-edge 3D mapping engine, eliminating the need for external API costs. Our proprietary technology creates realistic terrains using orthophotos and Digital Elevation Models (DEMs), allowing us to construct highly detailed 3D environments with high-quality building models and 3D tiles. all optimized for seamless integration and cost-effectiveness.

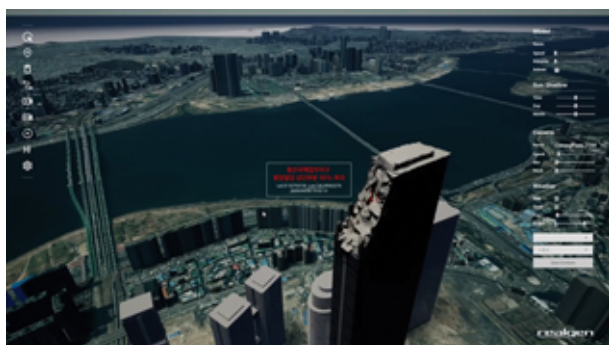
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3D Mapping Engine



Real-World Building Data



highly detailed 3D environments
with high-quality building models and 3D tiles.



Parallel Computing

Supporting parallel computing, our system automatically enables accurate labeling of numerous objects and the generation of large data sets.

- Generates more than 10 learning images and labeling data per second



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