

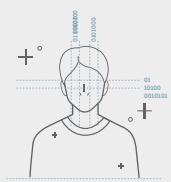
# Synthetic Data Generation Tool

Creating diverse data sets to advance AI safety systems

Smart Eye's Synthetic Data Generation Tool is a powerful solution for generating diverse, realistic data sets that support faster and more effective automotive AI development. By simulating real-world driving conditions and driver behaviors, this tool helps overcome the limits of traditional data collection.

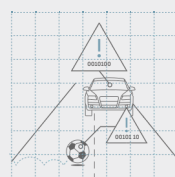
## How Does the Tool Work?

Using customizable 3D avatars and environmental modeling, here's how Smart Eye's Synthetic Data Generation Tool helps enhance automotive AI systems:



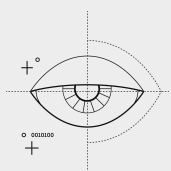
### Customizable Avatars

Covers a diverse range of driver demographics, including variations in age, body type, and appearance, for inclusive AI training.



### Edge Case Generation

Creates rare, safety-critical scenarios, enabling AI to learn from events difficult to capture in real life.



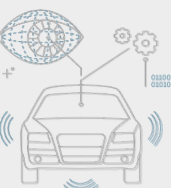
### Behavior Simulation

Models routine actions, complex states like distraction or drowsiness, and additional scenarios such as seat belt use, eating, or smoking.



### Camera Simulation

Delivers precise modeling of different cameras and conditions, including illumination, noise, and sunlight influence, to enhance performance.



### Objects and Environment

Simulates in-cabin objects like child seats, small items, or dangerous objects while varying lighting, angles, and visibility.



### Environmental Flexibility

Adapts in-cabin conditions to ensure AI systems function reliably across diverse real-world scenarios.

## Why Synthetic Data Generation is Essential for Automotive AI System

Smart Eye's Synthetic Data Generation Tool addresses one of the biggest challenges of automotive AI development: the need for incredibly comprehensive data sets.

To reach high levels of accuracy, automotive AI systems must be trained and validated on enormous amounts of highly diverse data.

Collecting this data is typically a complex, expensive, and time-consuming process.

As a complement to real-world video footage, our Synthetic Data Generation Tool provides vast and highly customizable data sets by creating lifelike simulations of in-cabin conditions.

It replicates driver appearances, behaviors, and even rare, safety-critical events that would be challenging to capture in real life. This diverse range of drivers and scenarios helps train and reduce bias in AI systems, ensuring they perform accurately across a variety of real-world conditions.

