



# Computer Vision Innovation for Defense and Security

May 2024

The need is essential for national security

# Accurate and instant detection saves lives, **thwart security threats and ensures strategic superiority in defense**



The solution providers problem

# The accuracy of detection depends on training data - **Data has to be diverse and accurately labelled**



In order to achieve good accuracy results, computer vision model needs large amount(**several hundred thousands**) of diverse labelled images, that cover all possible situations and scenarios , in different lighting/weather conditions by different camera sources and etc

Unique challenges in the Defense Industry

That is almost **unachievable** especially for **defense** related scenarios **where data is confidential and real situation data capture is very challenging**



The solution



# The answer to this problem – **realistic synthetic image datasets**

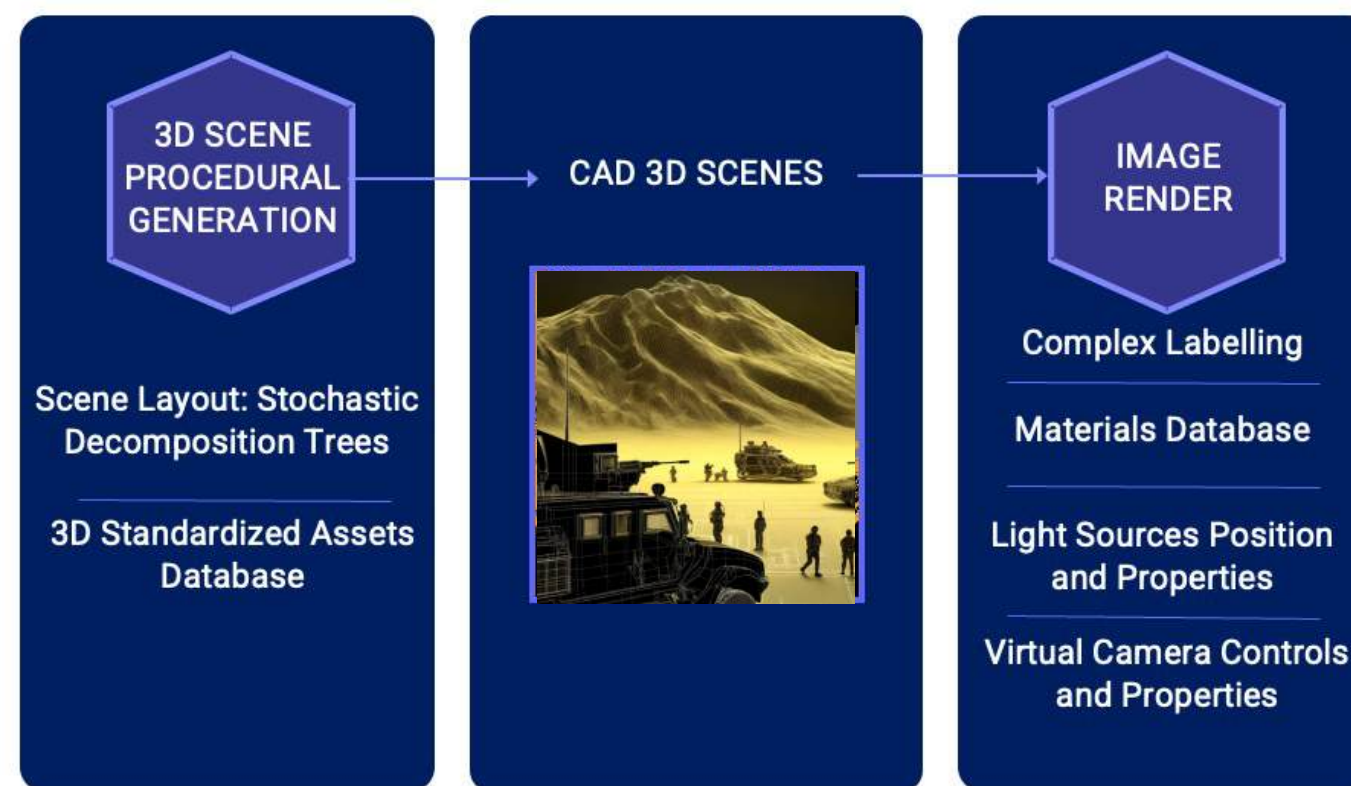




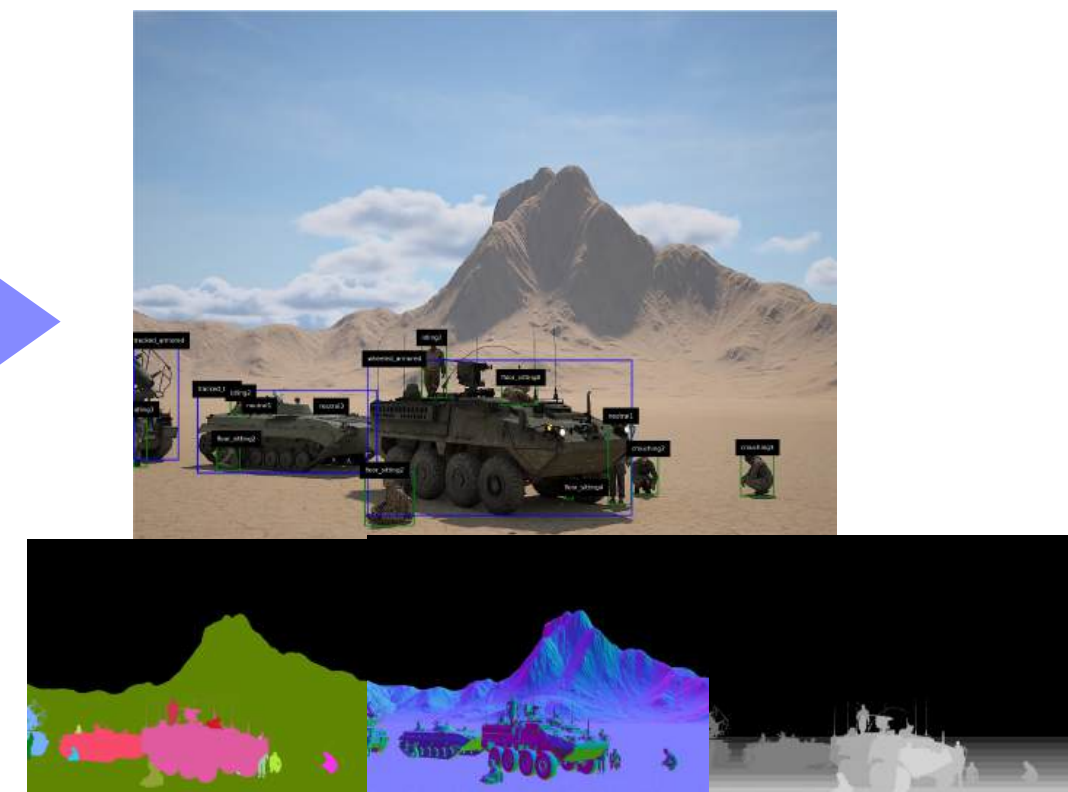
The AI Verse unique value proposition

@ **AI Verse** we developed an innovative and effective way to generate **diverse and fully labelled image datasets**

AI Verse Procedural Engine Controllable by the User



Fully Labelled Image Datasets



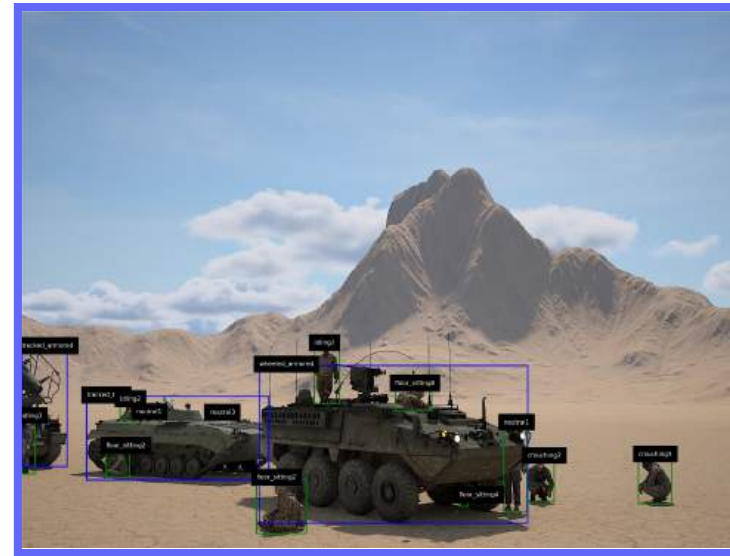


# 8 pixel perfect labels

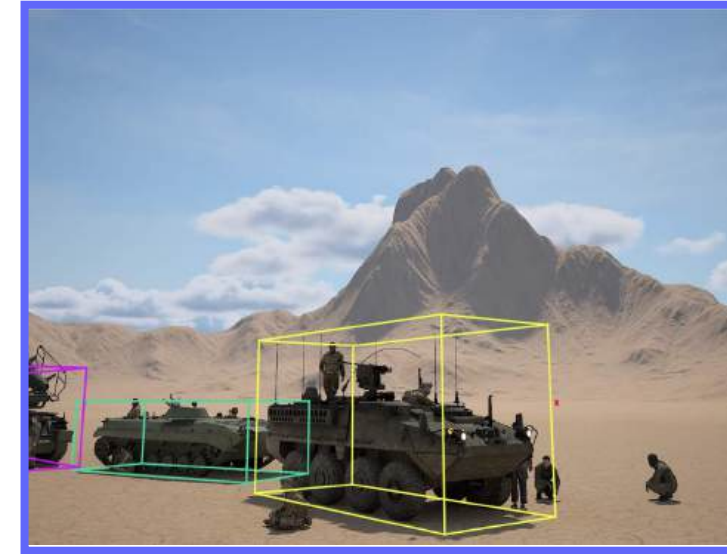
Color



2D Boxes



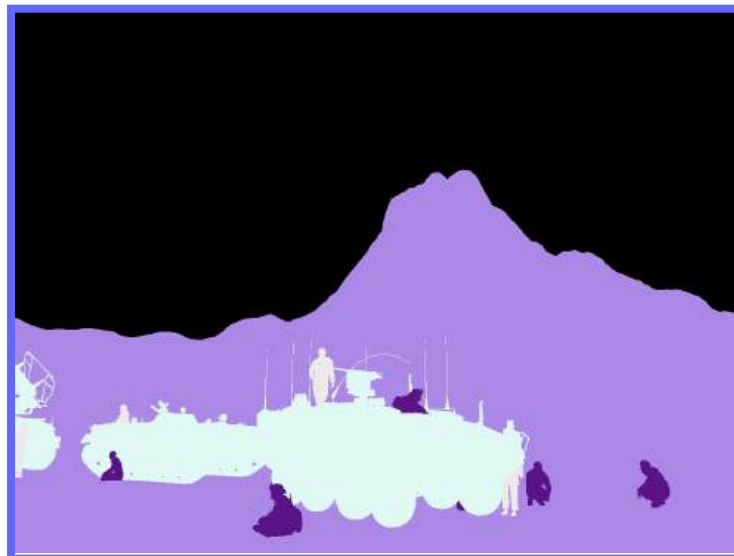
3D Boxes



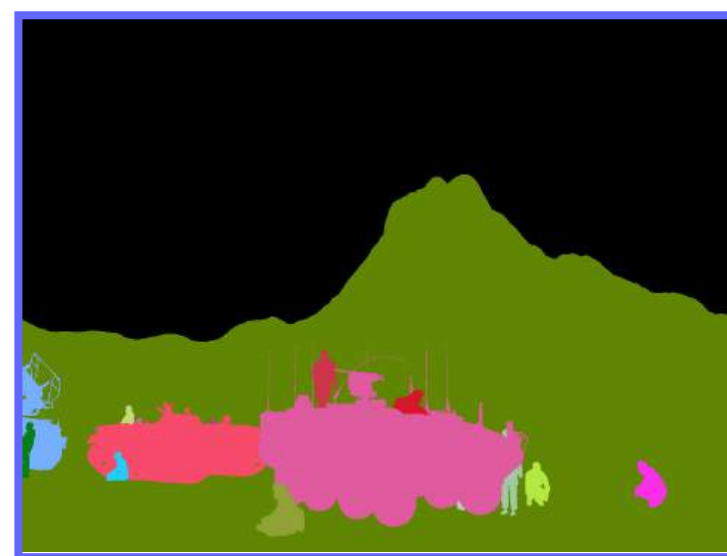
Skeletons



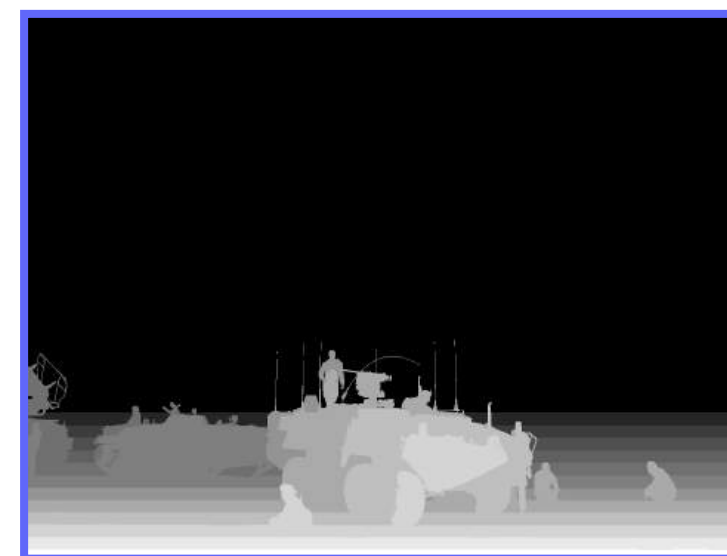
Classes



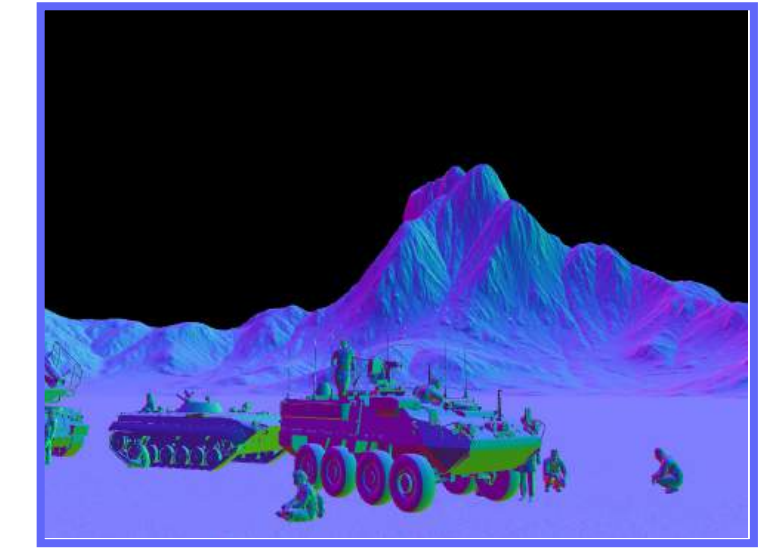
Instances



Depth



Normals





Unmatched diversity

Various sensors, lighting, weather condition, activities –  
**covering unmatched variety of situations**

Realistic synthetic images generated by AI Verse





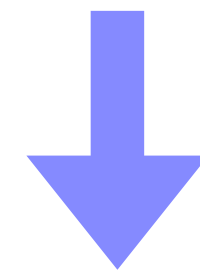


The result

# This unmatched diversity allows to reach highly accurate detection results



65 000 images



mAP=0,85

Armored vehicle detection. Yolo L model is trained on 100% synthetic images.

Deeptech Startup founded by researchers

# About **AI Verse**

Founded in 2020 in **INRIA** - French Institute for Research in Computer Science

## Investors:



## Partners:



## Location:

Sophia Antipolis. **France**  
Europe's largest Technology Park

## Founders:



### Benoit Morisset (CEO)

- PhD in Robotics & AI from LAAS-CNRS (FR)
- Senior Computer Scientist at Stanford Research Institute
- CEO and co-founder of Pixmap
- Held a senior engineering position at Apple



### Arnaud Lamorlette (CTO)

- 35 years of experience in the Computer Graphics industry
- Co-developed the Global Illumination Technology used in Shrek 2
- Scientific & Technical Award from the Academy of Motion Picture Arts and Sciences

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[www.ai-verse.com](http://www.ai-verse.com)

# Get in touch!



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**Book a call!**

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