3D DETECTION #1
POINT NB: 154
VARIANCE: 0.57
INFERENCE: A CUP
PROBABILITY: 0.87

3D DETECTION #2
POINT NB: 345
VARIANCE: 0.82
INFERENCE: A THING
PROBABILITY: 0.99

3D DETECTION #7
POINT NB: 5463
VARIANCE: 0.94
INFERENCE: A SCREEN
PROBABILITY: 0. 65

3D DETECTION #5
POINT NB: 684
VARIANCE: 0.07

3D DETECTION #12
POINT NB: 879
VARIANCE: 0.14
INFERENCE: A BALL
PROBABILITY: 0.98

INFERENCE: A DOG
PROBABILITY: 0.11

The first ever online course to fully master 3D Object Detection.
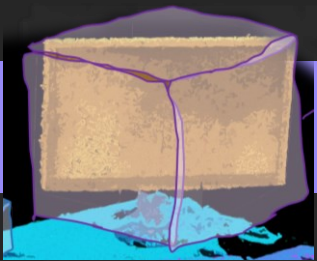
☑ No Prerequisites

☑ Real 3D Projects

☑ Lifetime Access

☑ Certified by Expert

3D OBJECT DETECTION: FULL COURSE

EDITION 2023

3D Geodata Academy

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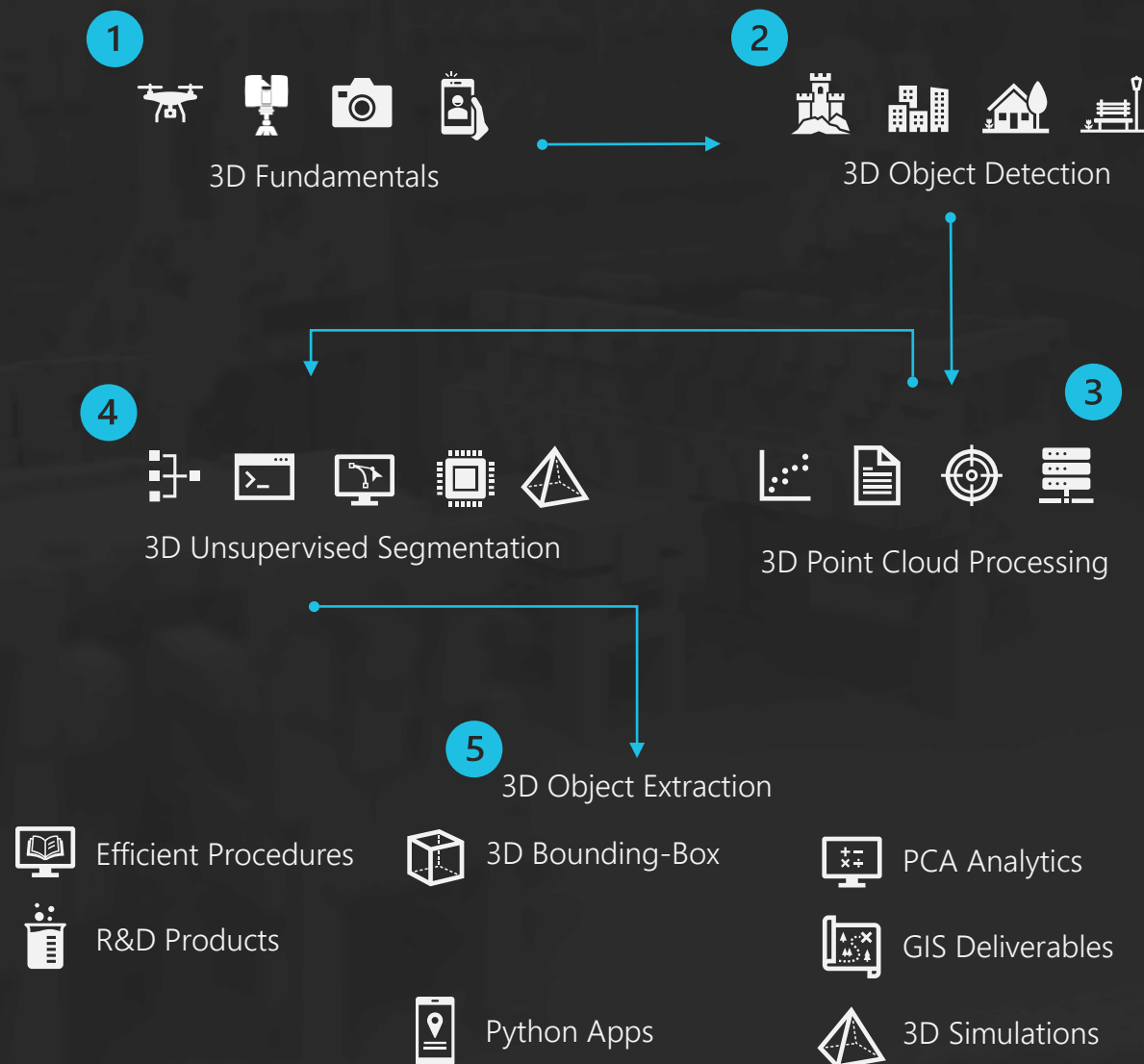Florent Poux, PhD
Course Director

3D OBJECT DETECTION FULL COURSE

This complete course teaches the secrets to creating the **most effective workflows** to extract 3D objects from point cloud data, wether you are:

a 👨‍💻 student,

a 👷 professional,

a 🧑‍🔬 researcher,

a 👮 manager,

a 🧑‍🏫 professor.

EDITION 2023

1 3D Fundamentals

2 3D Object Detection

4 3D Unsupervised Segmentation

3 3D Point Cloud Processing

5 3D Object Extraction

- Efficient Procedures
- 3D Bounding-Box
- PCA Analytics
- R&D Products
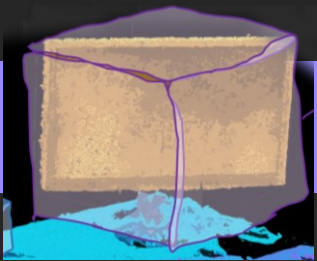- GIS Deliverables
- Python Apps
- 3D Simulations

Valentin Blind
CTO
Geovast 3D

"The 3D Object Detection Course is geared toward efficiency. I followed the course step-by-step and as a result, I now have an automated python system that extract 3D objects of interest from raw point cloud. I saved so much time and understand so much now!"

3D Geodata Academy

3D OBJECT DETECTION OVERVIEW

Module 1. 3D Fundamentals

What is the context of 3D Perception, and what are the fundamentals properties of 3D datasets from LiDAR.

Module 2. 3D Object Detection

Dive in the world of 3D Machine Learning and focus on a robust / efficient 3D Object Detection Workflows.

Module 3. 3D Point Cloud Processing

How to prepare raw point cloud datasets from different sensors (LiDAR, Scan, Photogrammetry) for 3D Perception.

Module 4. 3D Segmentation & Clustering

Develop a pure unsupervised segmentation procedure followed by three different clustering strategy.

Module 5. 3D Object Extraction

Apprehend 3D data structures and extract key insights to .best describe the 3D Bounding-Boxes of Detected objects.

+ 3 🎁 Python Bonuses

Combine all 5 concepts together to create and extend automatic workflows using Python and the CLI.

Hosted by
Florent Poux, PhD
Course Director

3D Geodata Academy

MODULE 1. 3D FUNDAMENTALS

CHAPTERS

01   **3D Sensing Fundamentals**

02   **LiDAR Sensing Fundamentals**

03   **3D Point Clouds and Representations**

What is the context of 3D Perception, and what are the fundamentals properties of 3D datasets from LiDAR.

🎓 LEARNING OUTCOMES

☑   Derive valuable information from point clouds

☑   Specialize the different 3D Sensing approaches

☑   Explore the differences between capturing methods

☑   Specialize on 3D LiDAR Acquisition (ADAS, GeoInfo)

☑   Unlock various 3D Point Cloud Representations

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MODULE 2. 3D OBJECT DETECTION SYSTEM

CHAPTERS

01   **3D Machine Learning Fundamentals**

02   **3D Object Detection Dive-In**

03   **Operational 3D LiDAR Object Detection Workflow**

Dive in the world of 3D Machine Learning and focus on a robust / efficient 3D Object Detection Workflows

LEARNING OUTCOMES

☑   Master the 3D Machine Learning context

☑   Deep-dive on 3D Object Detection workflows

☑   Delineate a clear 3D workflow for operational tasks

☑   Test Various R&D State-of-the-art approaches

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MODULE 3. 3D DATA PREPARATION

How to prepare raw point cloud datasets from different sensors (LiDAR, Scan, Photogrammetry) for 3D Perception.

CHAPTERS

01   **Code and Datasets**

02   **3D Python Libraries**

03   **Point Cloud in Python**

04   **Point Cloud Pre-Processing Fundamentals**

05   **Voxel-Grid Sampling**

LEARNING OUTCOMES

☑   Master the hands-on context of point cloud datasets

☑   Create ETL pipelines for ASCII / BINARY point clouds

☑   Unlock new 3D data representations (Mesh, Voxels)

☑   Implement a full data pre-processing workflow (incl. data sampling, cleaning, transformation, reduction)

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MODULE 4. 3D UNSUPERVISED CLUSTERING

CHAPTERS

Develop a pure unsupervised segmentation procedure followed by three different clustering strategy.

LEARNING OUTCOMES

☑ Develop a segmentation strategy

☑ Parse point cloud data set in specific structures

☑ Learn & Apply 3 different clustering approaches

☑ Optimize point cloud to 3D Perception workflows

☑ Optimize point cloud clustering strategies

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MODULE 5. 3D PERCEPTION EXTRACTION
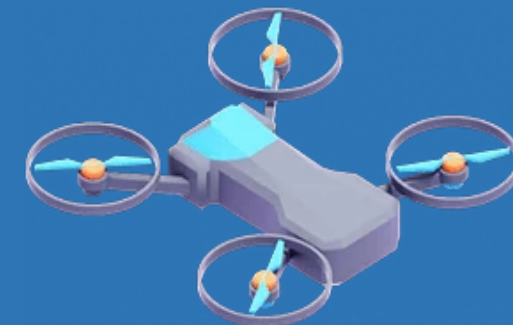
Apprehend 3D data structures and extract key insights to .best describe the 3D Bounding-Boxes of Detected objects.

CHAPTERS
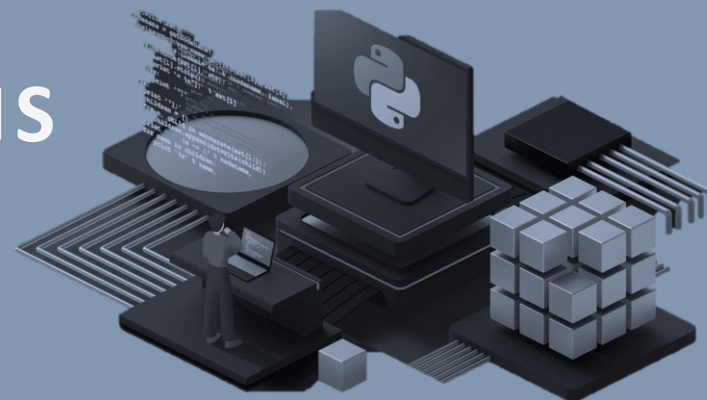
LEARNING OUTCOMES

☑ Learn and apply several segmentation workflows

☑ Master PCA to extract meaningful features

☑ Put a control system in place for robust quality reports

☑ Learn and apply the fundamentals of statistical analysis

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MODULE BONUS. 3D PYTHON ADD-ONS

CHAPTERS

01 **3D Python App Development**

02 **N-Order RANSAC: Domain Transfer**

03 **3D Integrated Workflows**

04 **ADAS: Available 3D Datasets**

05 **Python Starter Package (7 lessons)**

Combine all 5 concepts together to create and extend automatic workflows using Python and the CLI.

🎓 LEARNING OUTCOMES

☑ Optimize your Code with Python for 3D Data.

☑ Create a 3D Python application

☑ Extend your segmentation workflow with robustness

☑ Integrate your workflow in a wider context

☑ Start from scratch with the Python Starter Package

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3D OBJECT DETECTION COURSE

EDITION 2023

Limited Seats

- Launch Offer -

Value Price: € 1597

€ 397

★★★★★

☑ **99.4% Satisfaction**

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Single Access Token

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