



Image analysis services and solutions  
for life sciences

Services in life science using  
image analysis and machine  
learning

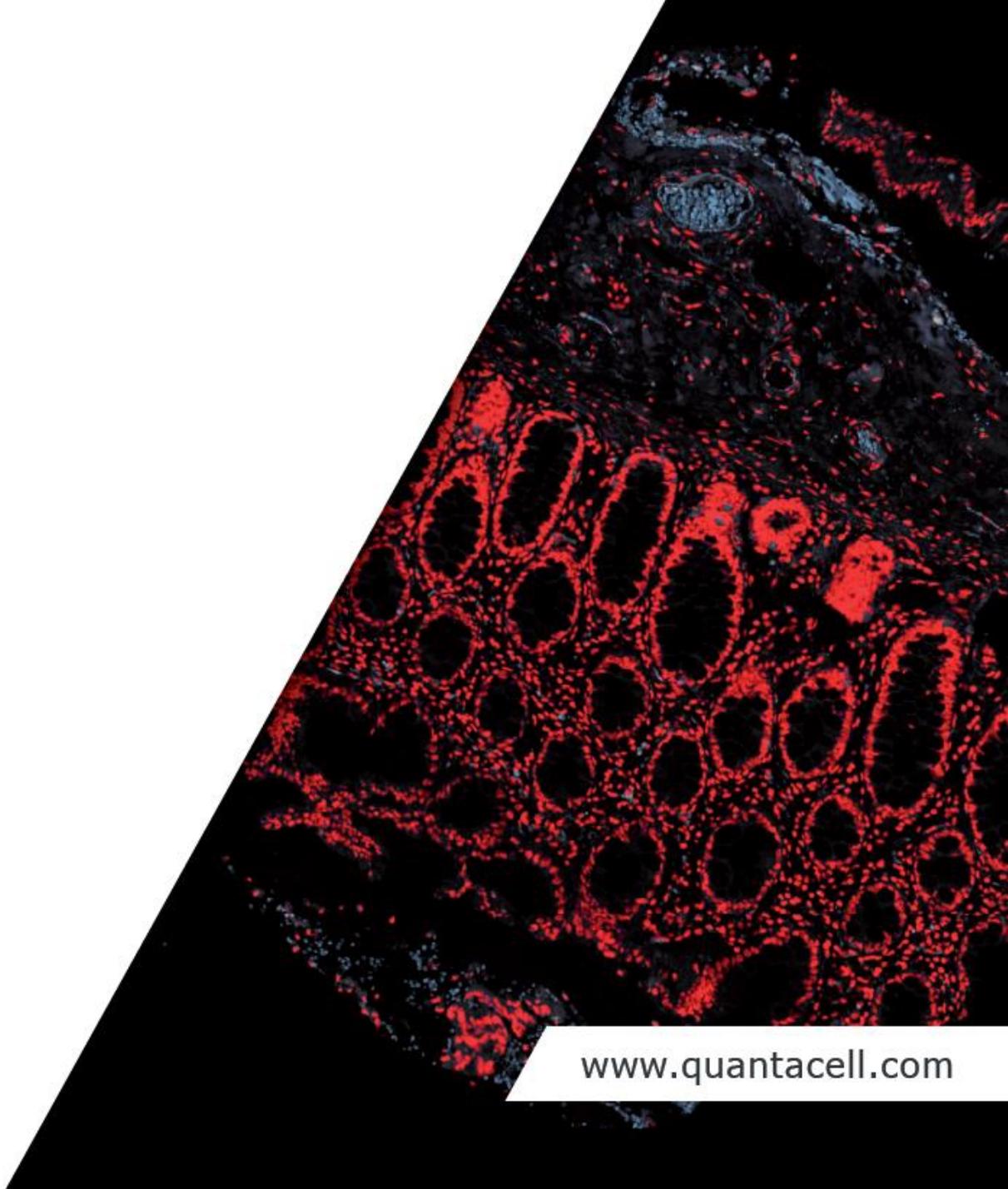
Victor Racine, PhD, CEO

Hôpital Saint Eloi, IRMB  
Montpellier

[victor.racine@quantacell.com](mailto:victor.racine@quantacell.com)

Tel : + 33 (0)9 83 33 81 90

GSM: +33 (0) 6 46 26 18 67

A large, triangular-shaped image on the right side of the slide, showing a fluorescence microscopy image of biological tissue. The image displays a complex network of red and blue structures, likely representing cells and their interactions. The red structures are more prominent and form a dense, interconnected pattern, while the blue structures are more sparse and appear as smaller, distinct spots or clusters. The overall appearance is that of a highly detailed, multi-layered biological structure.

[www.quantacell.com](http://www.quantacell.com)

## ► QUANTACELL COMPANY

✓ Biotech providing services and IT solutions.

✓ Privately held company founded in 2014.

✓ Certified for French research tax credit (2018-2020).



## QUANTACELL WORKS FOR R&D TEAMS



Pharma



Hospital



Medtech



Cosmetic

## ► QUANTACELL TEAM

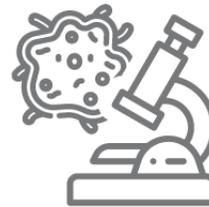
The team is composed of people with multiple know-how in biology, imaging & computer science. We have the ability to adapt to specific customer needs. We have a long experience in bio-analysis for imaging.



Computer science



Biology



Imaging



Project management



Quality management



## ▶ QUANT**ANALYTICS**

Service of sample or image quantification



## ▶ QUANTA**DEV**

Scientific software development



## ▶ QUANTA**SOFT**

Off-the-shelf imaging software

# Case studies

▶ **Phenotypic analysis**

Pronephros classification

▶ **DL for histology**

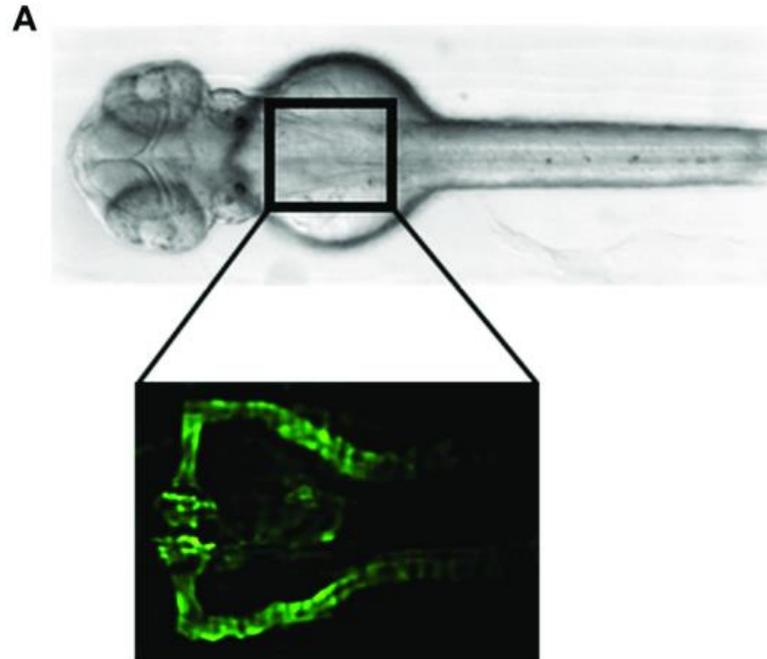
Glomeruli detection

▶ **Hackaton**

Deep learning for clinical study

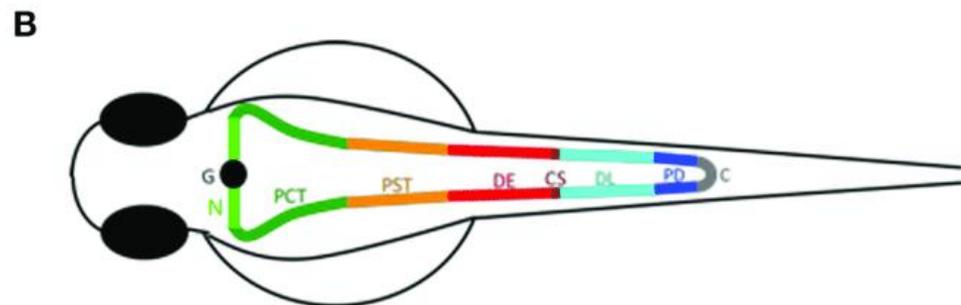
## ► Phenotypic analysis

## Pronephros classification



Pronephros: Good model for the human kidney

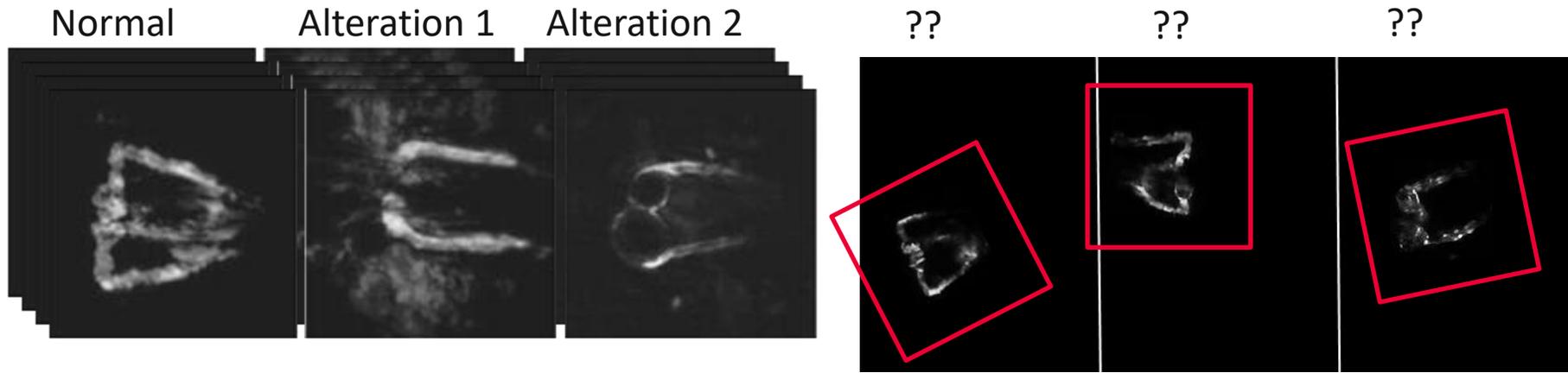
Zebrafish: simple and transparent model



Simple way to detect early development defects

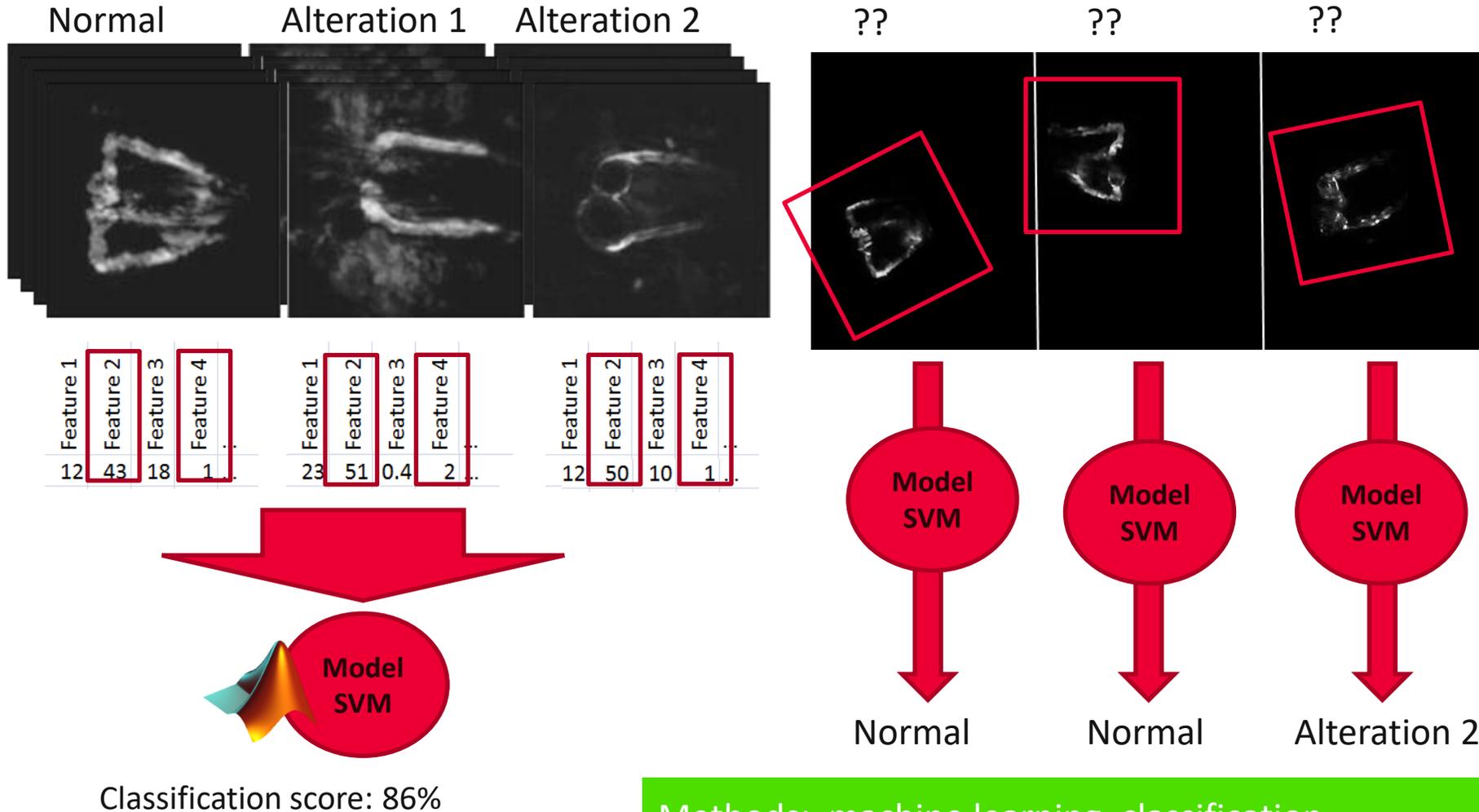
# ▶ Phenotypic analysis

## Pronephros classification



# ► Phenotypic analysis

## Pronephros classification

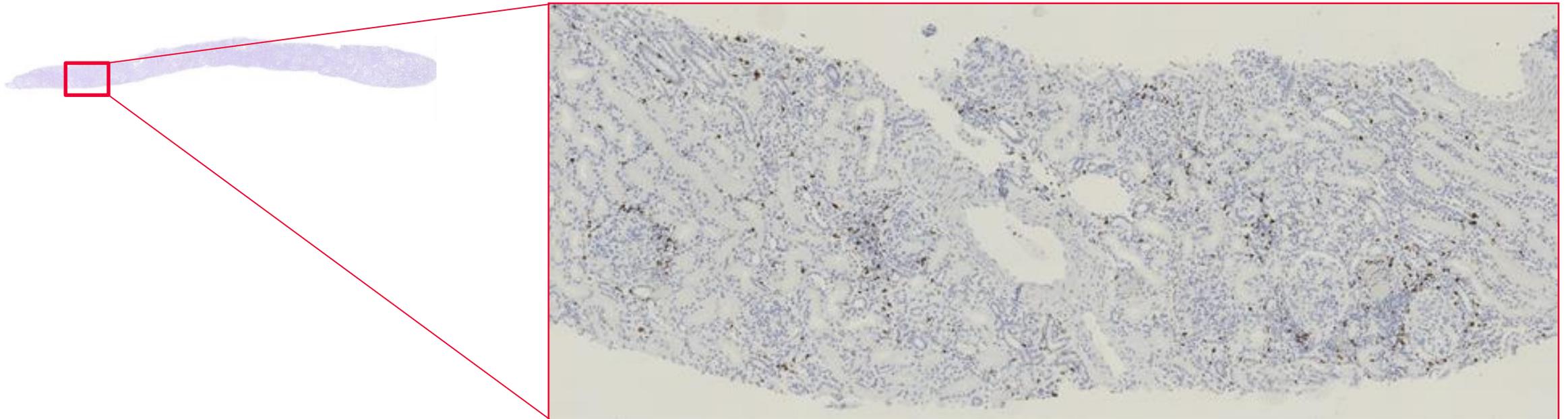


Methods: machine learning, classification

Problem: Large sample + low contrast object -> Complex inspections for experts

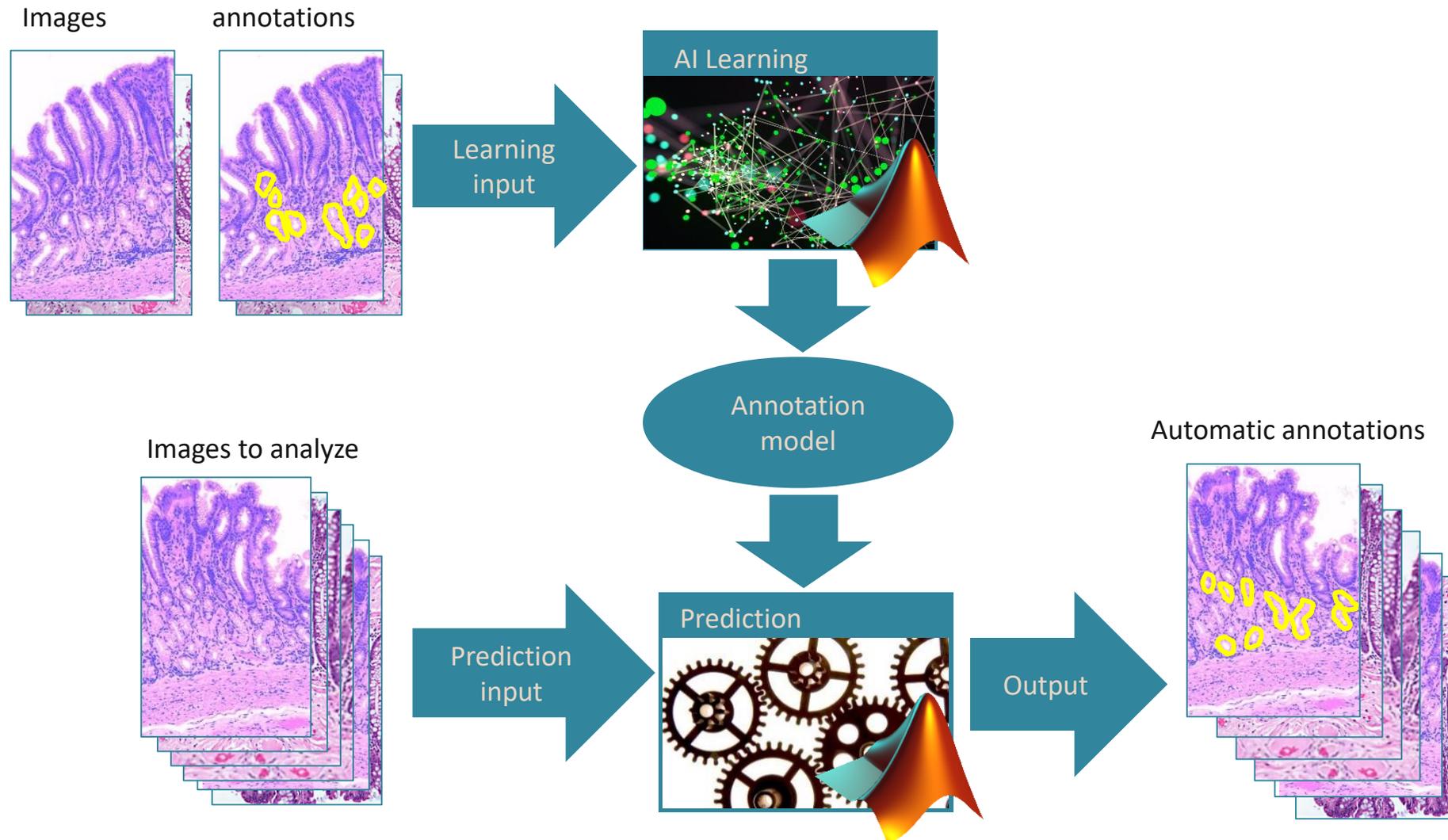
Solution: An expert annotates some glomeruli regions

Process: The regions are learned by the neural network, and then predicted automatically

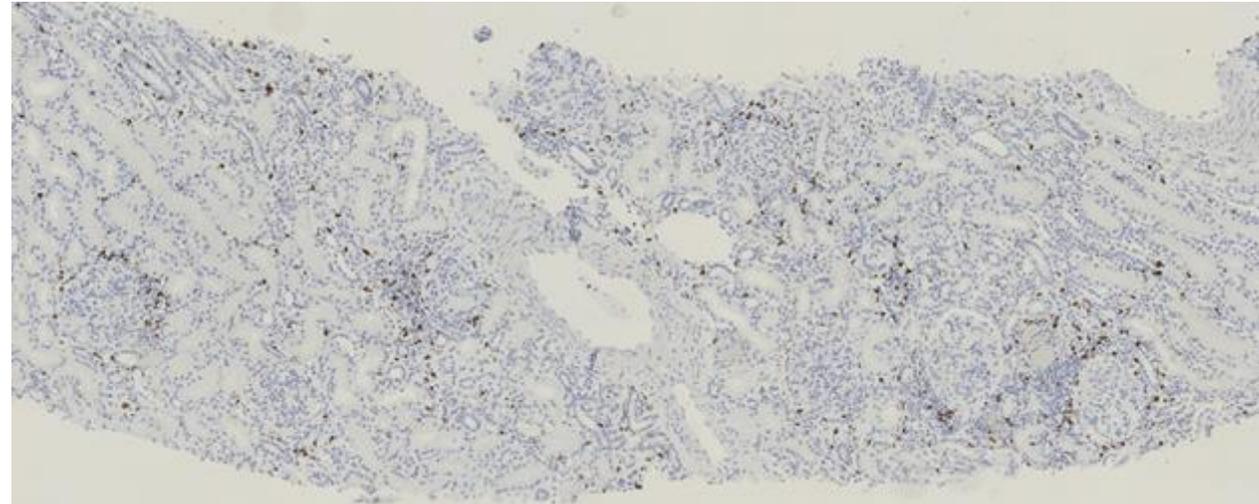


# ▶ Deep learning for histology

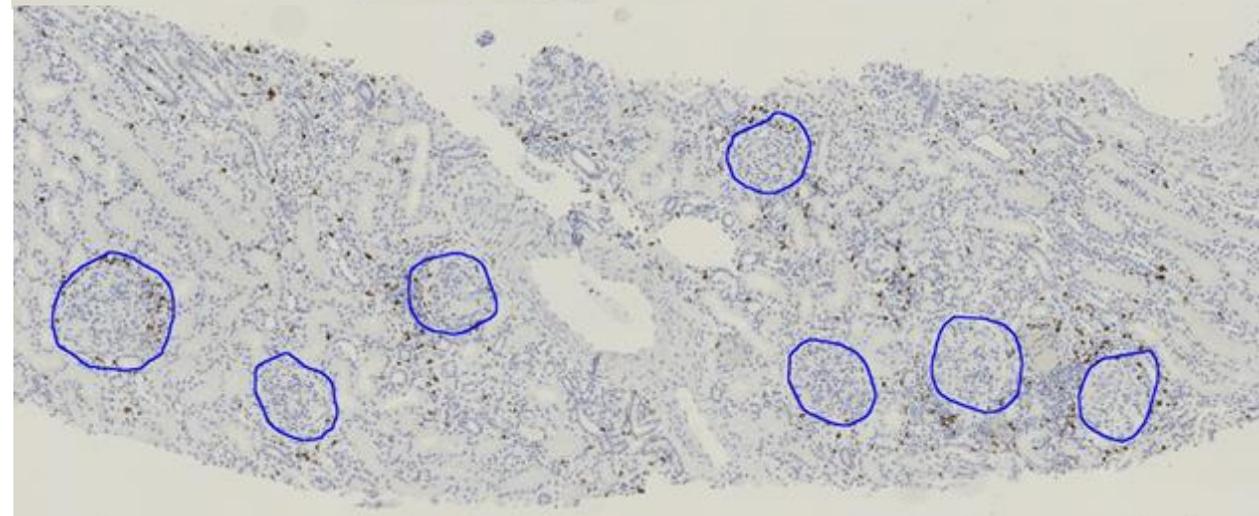
## Glomeruli detection



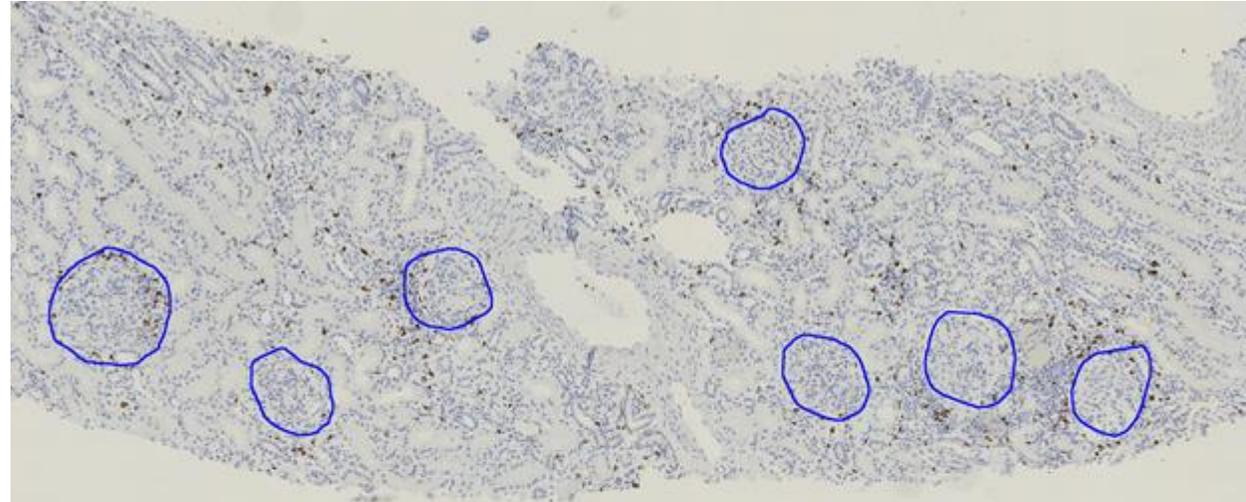
Original image



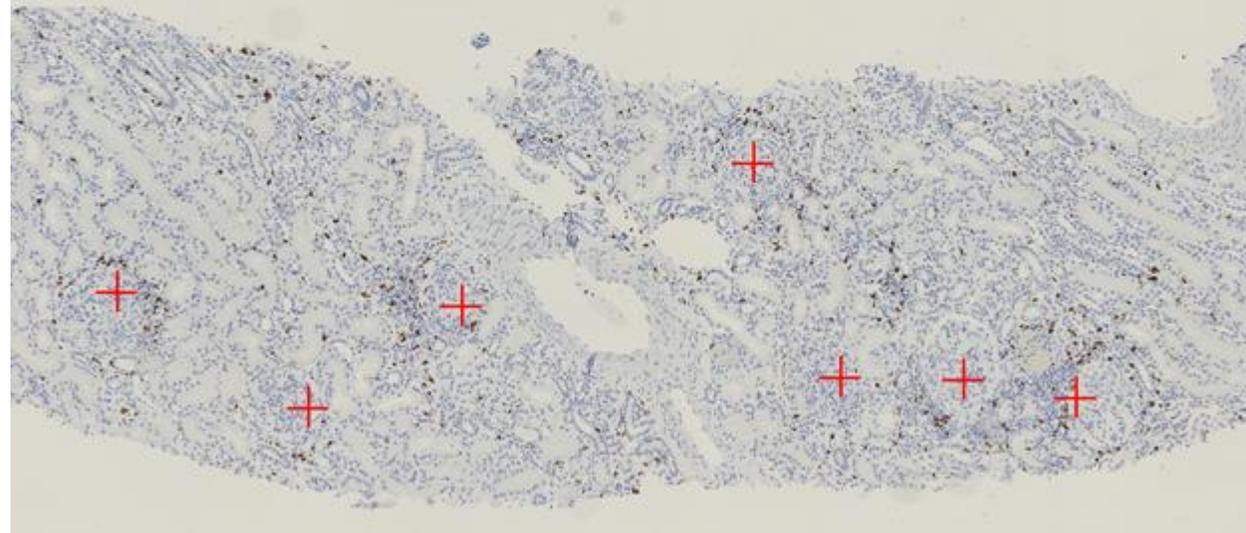
Detection done by experts



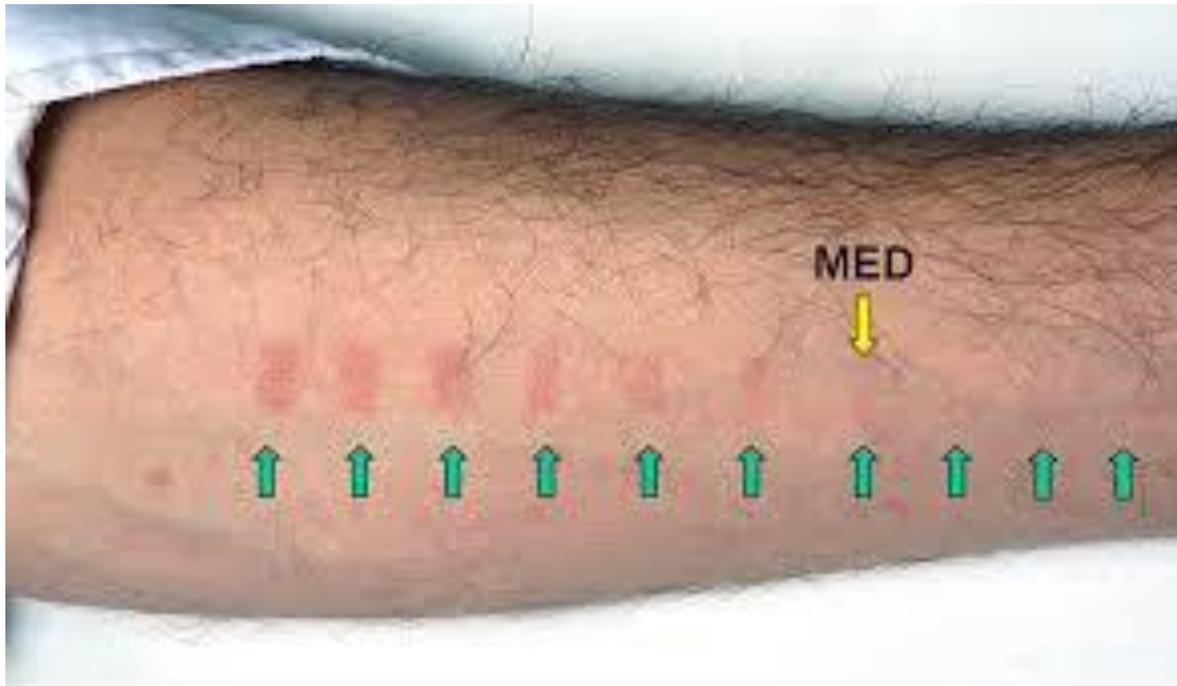
Detection done by experts



Detection done by neural networks



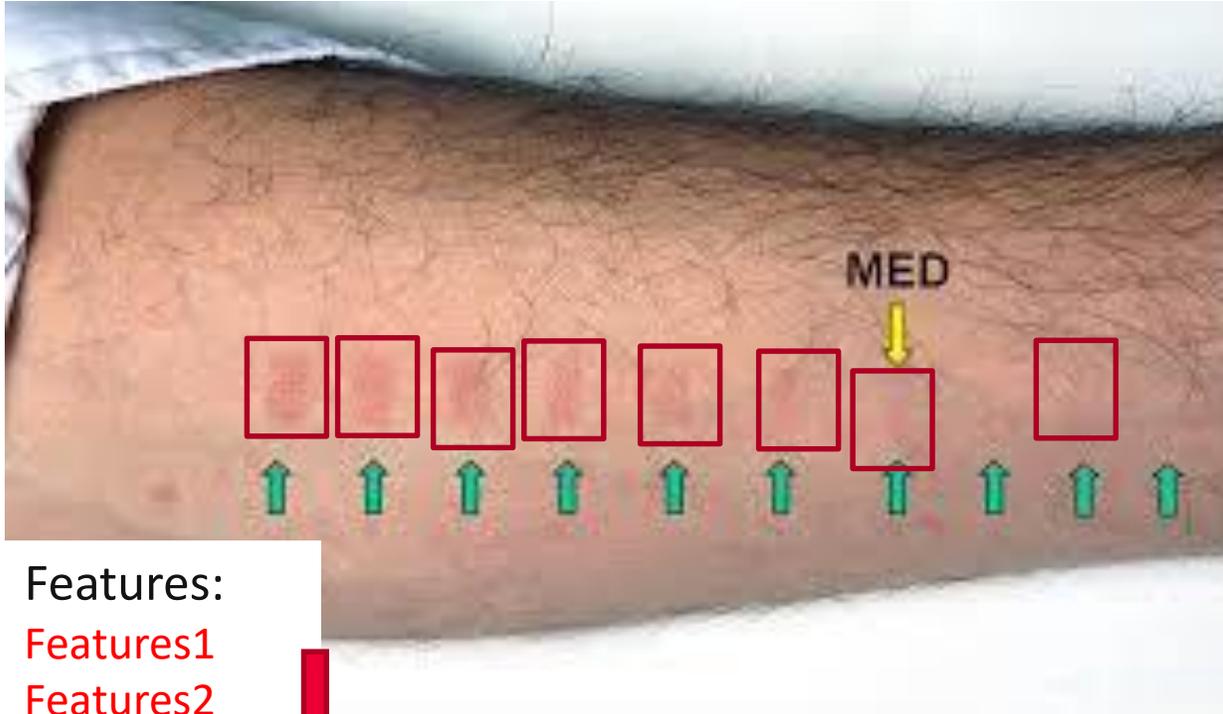
**Problem:** IA Santé Challenge organized by Pierre Fabre Group on the theme of skin cancer



Participants developed in record time, an artificial intelligence tool applied to medical images.

## ▶ Hackaton

## Deep learning for clinical study



Features:

Features1  
Features2  
Features3  
Features4  
Features5  
Features6  
Features7  
Features8  
Features9  
Features10

sorting

SVM regression

MED Score

- Build ground truth
- Deep learning segmentation
- Machine learning
- Visualization results



QuantaCell won the IA  
Santé Challenge with  
60% accuracy %

▶ Question ?

- Thanks for your attention

Victor Racine, PhD

CEO

[victor.racine@quantacell.com](mailto:victor.racine@quantacell.com)

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