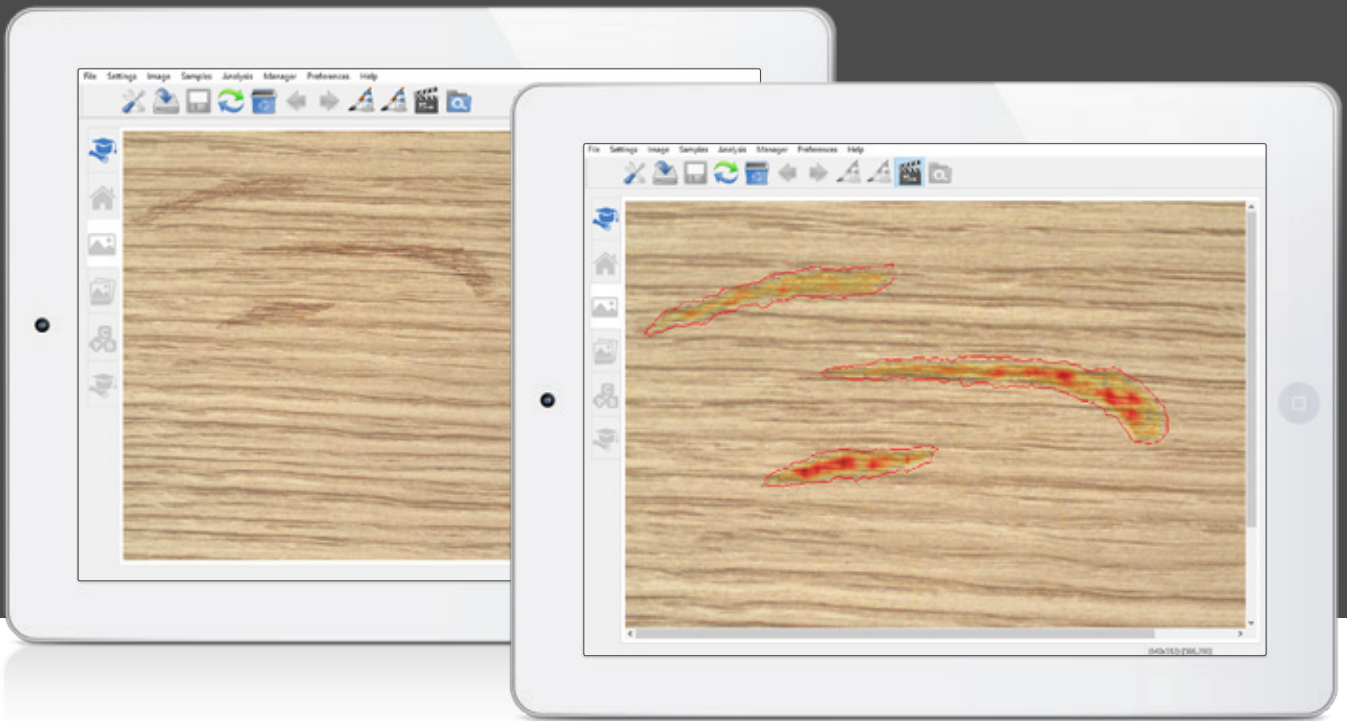


**SQUEEZE
BRAINS**
INSIDE ARTIFICIAL INTELLIGENCE

Surface
Defect inspection

New horizons in the
artificial vision



Machine learning-based imaging system for surface defect inspection

WHAT IS SURFACE?

- SURFACE is a C/C++ library based on artificial intelligence for digital image processing.
- It analyzes the images with a generic algorithm, which is not dedicated to any specific task.
- It has the ability to learn and recognize surface defects.
- The training is carried out through a supervised procedure (SVL) that uses a set of images.
- No configuration parameters are needed: as a matter of fact parameters are the images used for the training.

CHARACTERISTICS

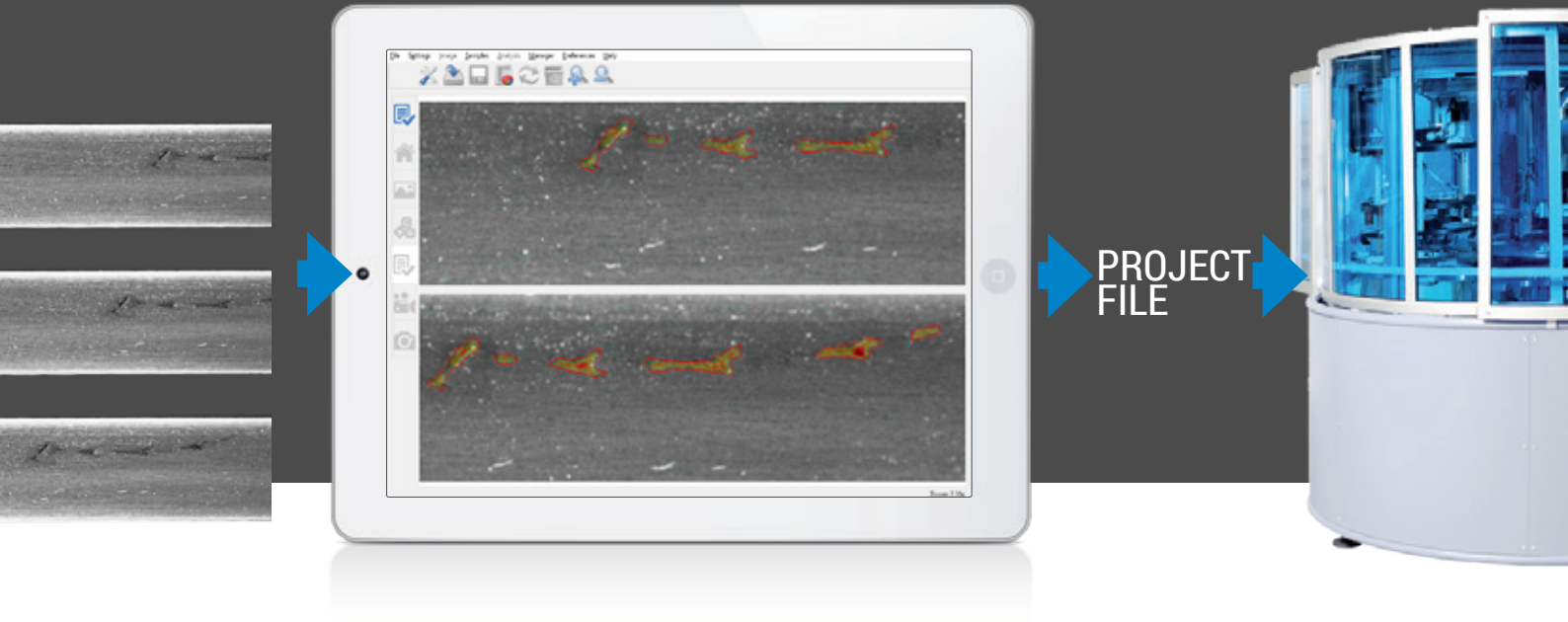
- It is a visual Perception system.
- Generic analysis not dedicated to any specific task.
- No configuration parameters needed.
- It learns by Training.
- Supervised learning (SVL) with human-machine interaction.
- Support for multi thread and multi core processing.

QUALITY CONTROL

ROBOT VISION

AUTOMATION

SORTING MACHINES



API

- C interface
- Easy to integrate in your software
- Minimal integration: add code for elaboration and use the GUI for learning
- Full integration: develop your own GUI for learning
- Image formats supported: pgm, ppm, bmp, png, tiff, jpeg
- BW and color image elaboration



HOW TO TRAIN SURFACE

- The operator creates a set of images, which is representative of defect variability
- The operator manually paints the defect region
- The operator starts the interactive SVL procedure
- SURFACE is trained and ready to be used



GUI

- Labeling assistant
- Managing both images for learning and ones for test
- Executing learning of models (SVL)
- Testing the learning
- Profiling results
- Exporting of results (csv, pdf)



YOU TEACH... SURFACE LEARNS

The operator defines the target: the SVL works in order to achieve it



SEGMENTATION

Never so easy if you use the perception!



SYSTEM REQUIREMENTS

- Library for x86 and ARM architecture
- Does not require dedicated hardware (no GPU)
- SO: Windows, Linux, Android
- Balances RAM/HD according to data base size



USE CASES

- Quality control
- Defect inspections
- Sorting



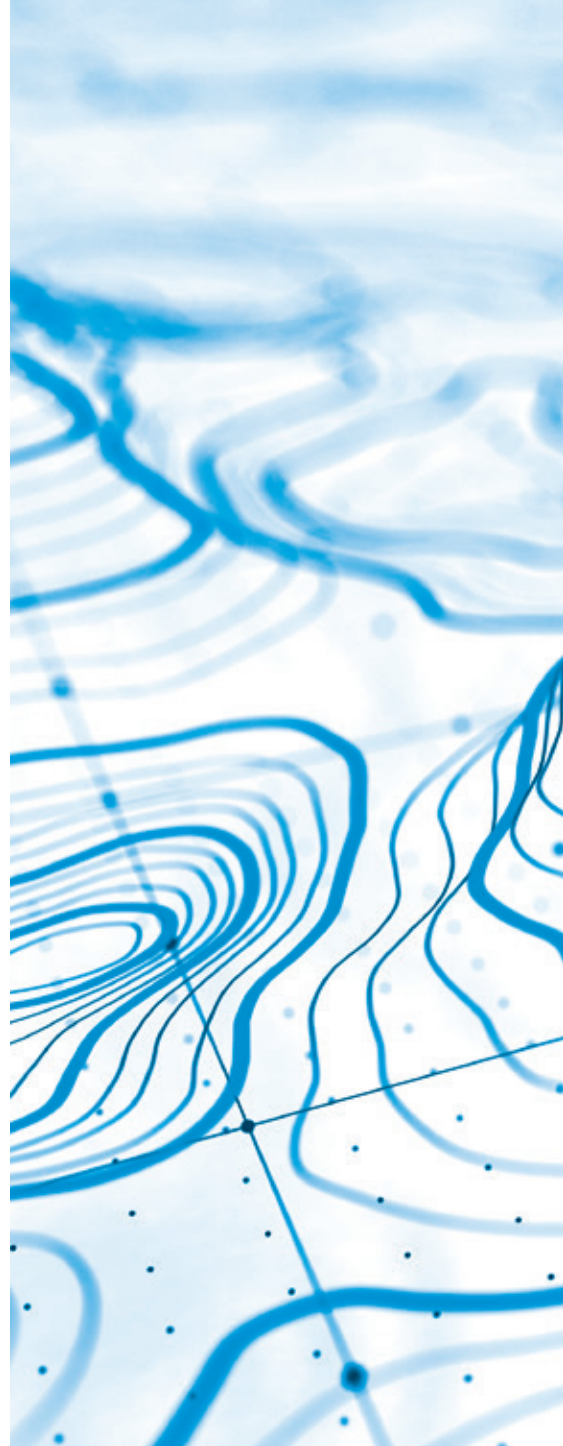
GPU

Don't you have a GPU?
Don't worry, you don't need it!



EMBEDDED

Porting on embedded systems is possible



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