

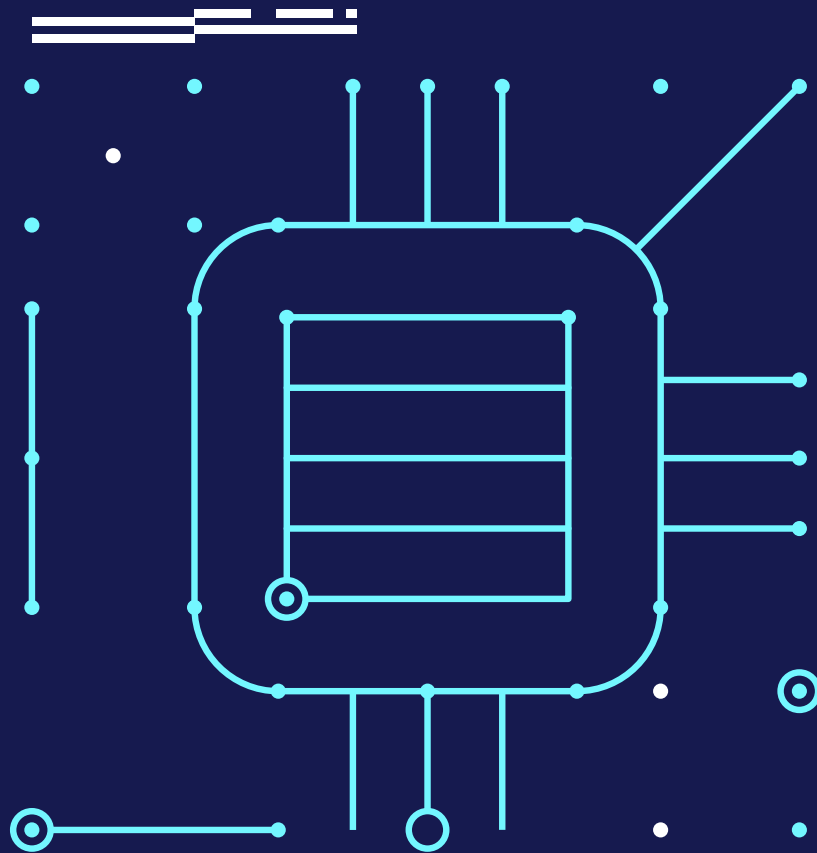


AI ADC

Automatic Defect
Classification

An efficiency & accuracy
boost in semicon

BY BART VAN POUCKE



Process Control & Defect Inspection

WAFER PRODUCTION



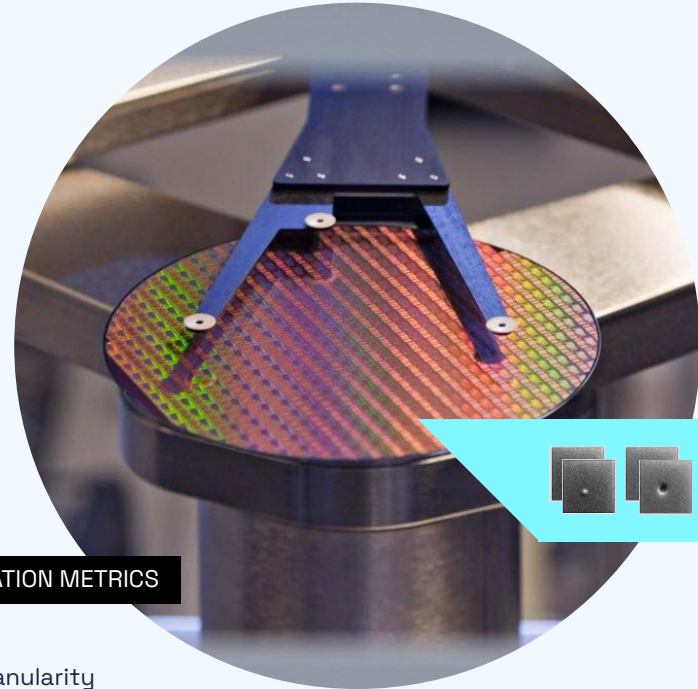
DEFECT DETECTION



DEFECT REVIEW



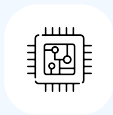
DEFECT CLASSIFICATION



EVALUATION METRICS

- Granularity
- Accuracy
- Throughput
- Level of Automation

Transformative role of AI in Defect Classification



1

Handle the exploding product mix in today's micro & nano chip fabs



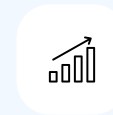
2

Target highest efficiency operation



3

Support growing defect complexity



4

Increase yield learning rate

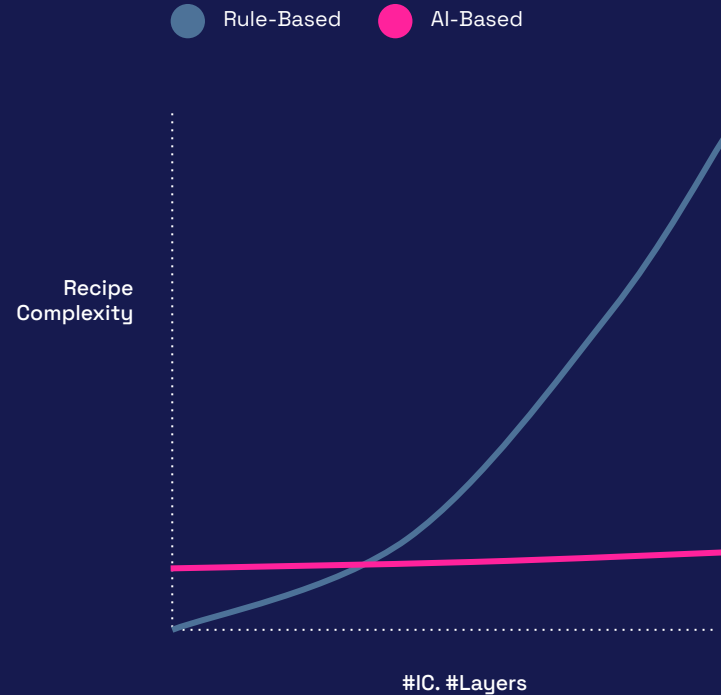
01



Handle the **exploding product mix** in today's micro & nano chip fabs

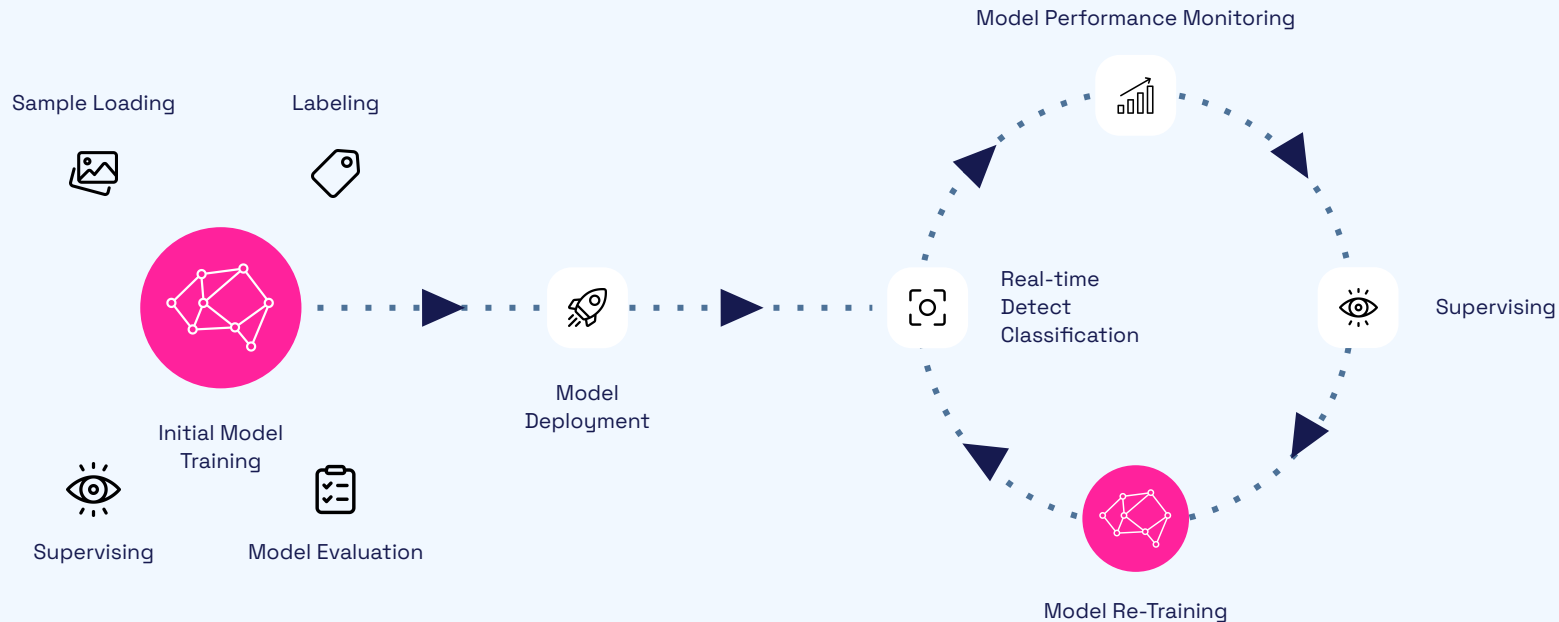
Exploding Product Mix

- Short lifetime consumer products
- Hybrid Integration
- High customisation for Industrial, Space & Automotive products





Target **highest efficiency** operation





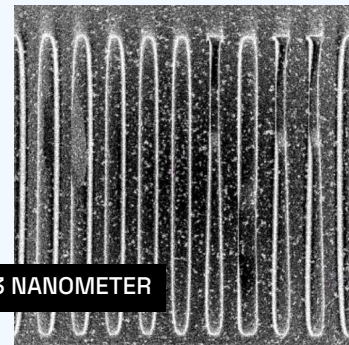
Support **growing defect complexity**

GROWING DEFECT COMPLEXITY

- Continuous shrink of device pattern
- 3D complex geometries
- Heterogeneous Integration
- New materials and material combinations

AI CAPABILITIES

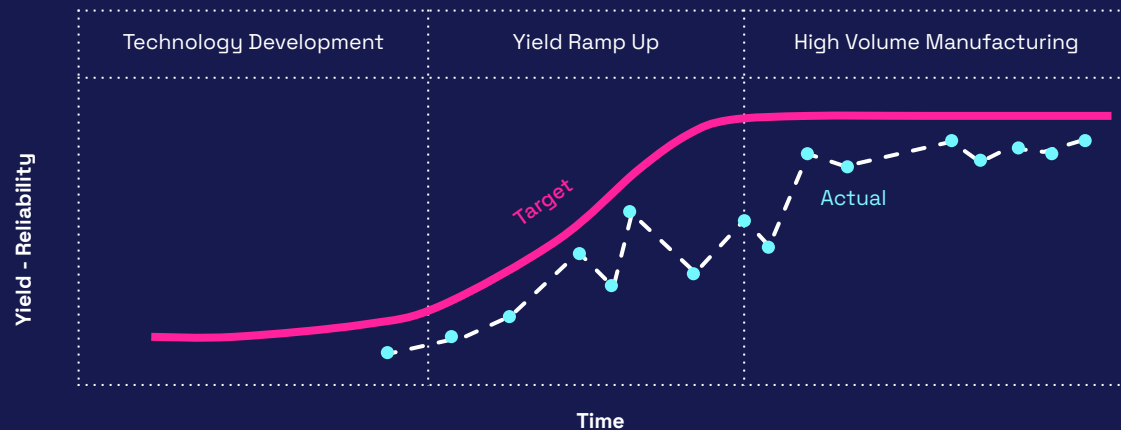
- “If a human can detect, you can train AI model”
- 2D / 3D
- Better at extracting the actual killer defect signal from a noisy background



04



Enable
Yield
learning rate
increase



Defect Classification Method			Throughput	Time for detecting new failure mechanism
Manual			Low	Instant
Automatic	Rule Based		High	Long
	Deep Learning AI	Pre-Trained		Infinite
		Offline Retraining		Long
		Online Retraining		Short



Robovision AI ADC

An efficiency and accuracy
boost for semicon fabs

PROVEN TRANSFORMATIVE ROLE

- Operational in multiple tier-1 fabs

EXPLOITING SME EXPERTISE FROM LAB TO FAB

- Model creation by process engineer
- Online optimisation by operator

ENABLER FOR TECHNOLOGY MIGRATION OF LABS

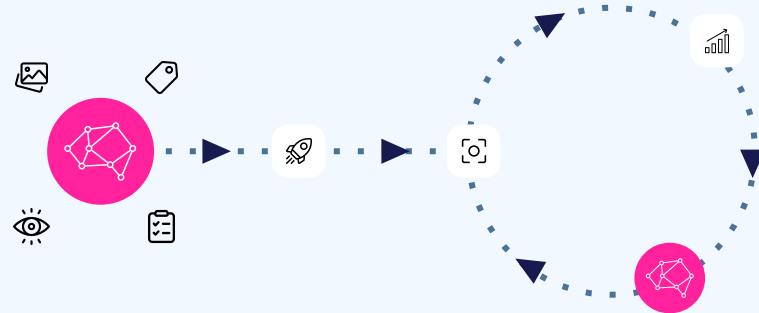
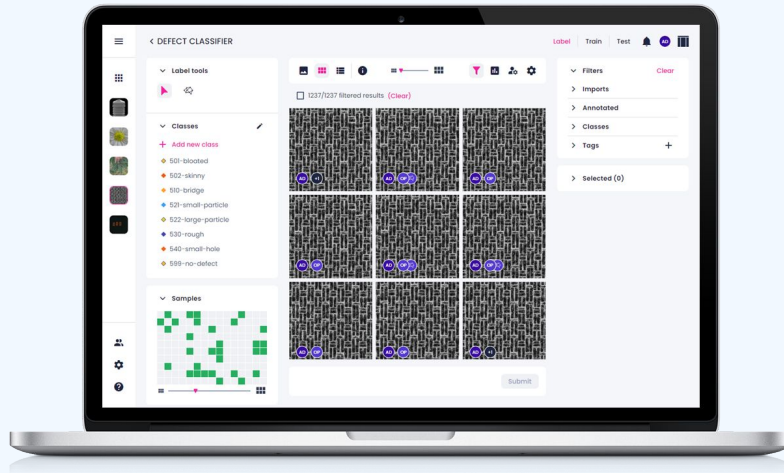
- Build custom vision AI application targeted at your specific fab needs
- Repurpose your fab inspection equipment capabilities through software

Robovision Semicon AI Platform

Support fab operations
in the sector that is enabling it

DEMO AT BOOTH B0-403

- Easy to Integrate
- Online optimisation by operator
- Compatible with any 2d/3d image
- Multi-Application





Thank you!

WWW.ROBOVISION.AI