

OPC DAY
FINLAND 2025
10.12.2025

Industry Examples

Huhtamäki paperboard cup quality control
Weir Edge Hub Gateway

Veli-Pekka Salo, Head of AI, Analytics and Automation
Aurelian Pop, Team Lead and Technical PM

Wapice

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Wapice

Your Industrial Partner for AI, Software and OPC UA



- › Transforming **Industrial and Energy Companies** through digitalization since 1999
- › **Private ownership**
- › Continuous **organic** and **profitable** growth
- › Employing **>330 SW** and **AI** experts
- › 11 office locations in Finland
- › ISO 9001, ISO 14001 and **ISO 27001** certified



National
Entrepreneur
Award 2016



CERTIFIED
Partner

ENABLER OF
EnergyWeek
2018



EtherCAT
Technology Group



Microsoft
Partner

2019 Partner of the Year Winner
Application Innovation Award



THIS IS Huhtamaki

Global market and innovation leader in sustainable packaging for food-on-the-go, food-on-the shelf and everyday necessities.

Driving profitable growth through scaling core business, sustainable innovation and improving operational performance

Converting raw materials into fit-for-purpose packaging using three technologies

- Fiber
- Paperboard
- Flexibles



NET SALES
€4.1B

ADJUSTED EBIT
M€ 416.9

ADJUSTED EBIT MARGIN
10.1%

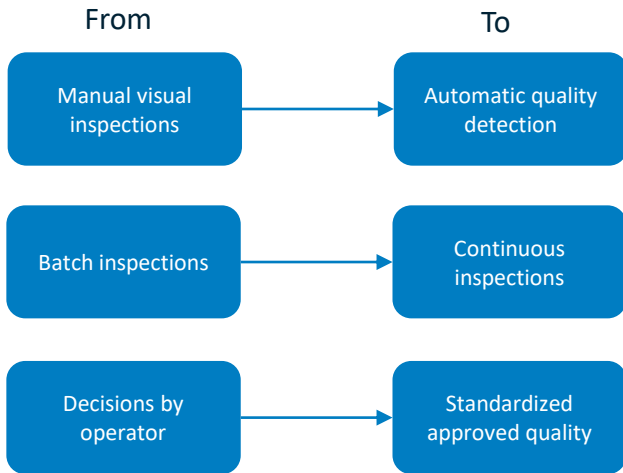
OPERATING COUNTRIES
36

OPERATING LOCATIONS
102

EMPLOYEES
17,794



Machine vision quality control for paperboard cups



Typical types of defects

Training a custom vision model

› Label (or Class)

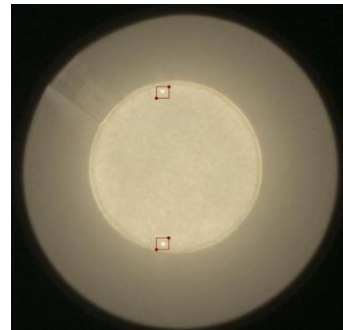
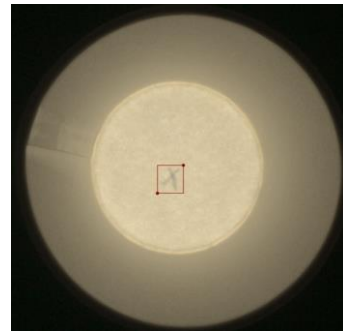
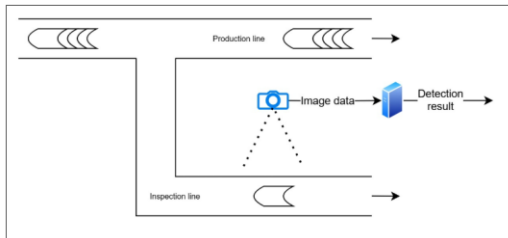
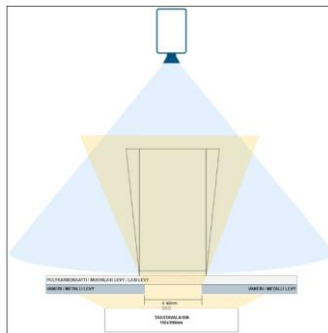
- › The category assigned to an object in image (*e.g. Defect*)

› Bounding Box

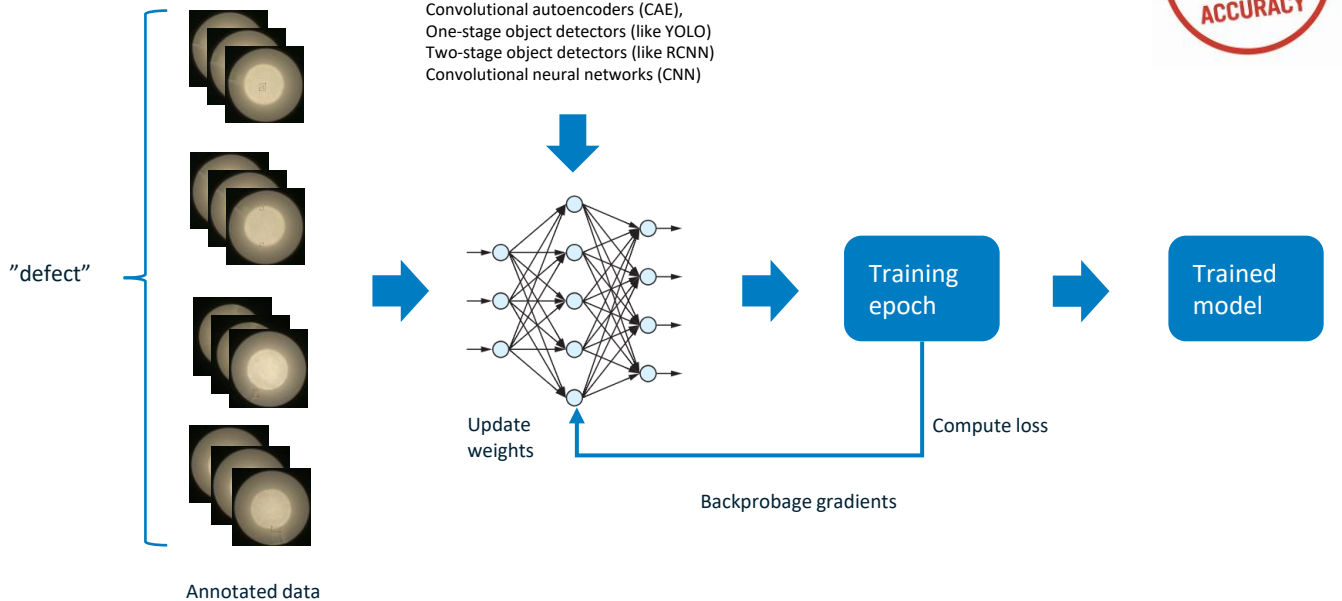
- › A rectangle drawn around an object
- › Provides location and size information to help model understand object placement

› Annotation

- › Combination of bounding box and label.

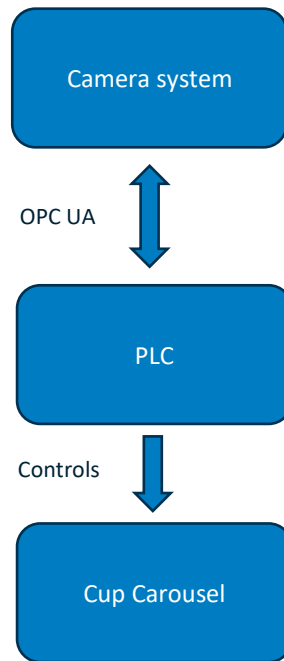


Training a custom vision model



The benefits of OPC UA

- › In this project, OPC UA enabled simple, standardized interfaces between the camera system and PLC controlling the cup carousel.
- › This enabled sharing responsibilities effectively
- › → Huhtamäki focused on automation; Wapice focused on AI and machine vision models.
- › OPC UA is sometimes criticized as too big, too complex, and hard to understand.
- › **This is not true!**
- › Think of OPC UA as a Swiss Army knife: You only use the tools you need.



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OPC UA industry example

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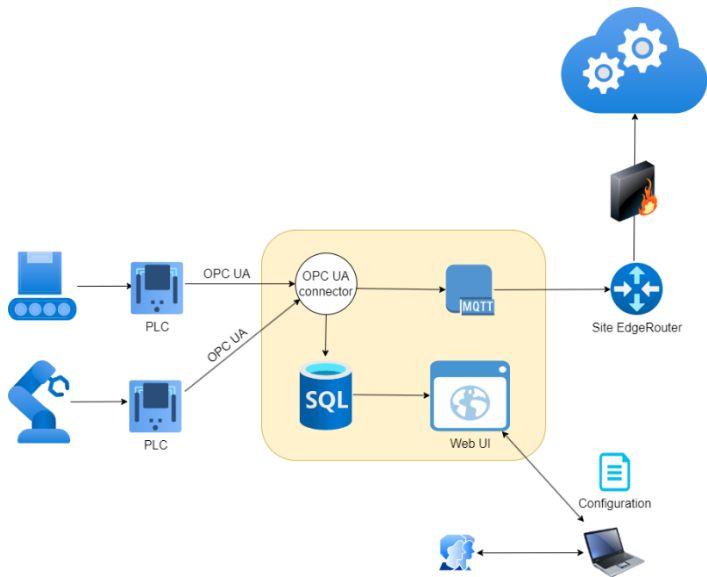
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Project Overview

- Original goal
 - OPC UA capable industrial IoT edge gateway software solution
 - In-place replacement for an existing unmaintained legacy system
- Key milestones
 - Proof of concept, early September (1m)
 - Working OPC UA client demo
 - Feature-parity preview-release, early December (3m)
 - All features implemented and functional
 - Production ready release, mid January (1m)
 - Documentation, test reports, SBOM, etc.



High Level Architecture

- PLCs sending sensor data from industrial equipment over OPC UA
- Select symbols persisted to local database for a period
- Select symbols also sent to cloud service
- UI allows configuration, basic health monitoring and support for off-line inspection

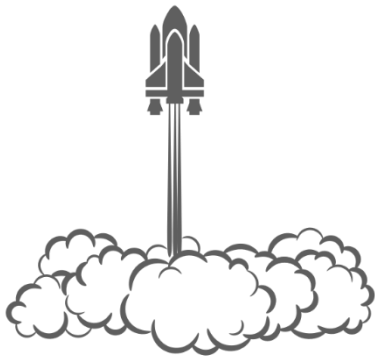
Technology choice

- Greenfield project, we had the luxury to chose new technologies
 - We were confident we could do it using “safe” Rust exclusively
- Main risk
 - OPC UA “crate” (library) maturity level was unknown
 - The other dependencies were quite well established
- Given the small scope of the project, we decided to go ahead and take the risk
 - We used the PoC as an opportunity to assess and mitigate the risk



Results

- Every milestone was reached on time
 - No delays with no compromises on quality
- Project scope was increased, with new requirements
 - Finally, the project ended almost exactly one year after it started
- Zero bugs found so far (15 months and counting)
 - There were 2 “maintenance” minor patch releases
 - Minor requirement misunderstanding (UI related)
 - Add more software checkpoints as logging events
- Bonus point: prevented a release with a zero-day vulnerability
 - If anyone is interested to hear more, I could go into more details at our booth



OPC UA crate

- Originally developed by a single developer
 - Fully functional, but development speed was slowing down
- Active community, providing patches and support
 - There was a growing list of unhandled PRs from the open-source community
- We proposed to the crate owner to become active maintainers
 - Originally well received, but then there were no replies

Current Rust OPC UA situation

- The OPC UA community forked the project under the ownership of the Free OPC UA developer organization
 - Guarantees for the future and cross-pollination between the Rust variant and the others (Python and C++)
- The (new) crate is currently being actively maintained and developed
 - 4 releases this year
 - Most recent one last week

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Thank You!

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