EVO*TEGRA*

CONCEPTS & INTEGRATION

"Safe shopping"
Concepts for shop
based retail during a
pandemic

www.evotegra.com

Evotegra GmbH

We offer customer-specific solutions and products for image recognition with artificial intelligence with a focus on industry and retail.

"Evotegra GmbH has extensive experience, processes and tools for the automated acquisition and labelling of image data"

Retail

Impact of the Corona pandemic on retail shops

Retailer shops around the globe face new challenges on a daily basis that need to be implemented in shortest time, while customers fear of infection will dramatically change the shopping habits.

AI systems can support retail to efficiently implement and enforce new regulations as well as to implement a "safe shopping" policy which will become vital especially for non-critical retail shops.

Current Situation

As the Corona virus spreads exponentially most countries shut down non-critical retail shops.

Lock down in most countries

- Only system-critical retail shops allowed to open
  - Social distancing required
    - Limited amount of simultaneous customers
    - Minimum distance required
  - Mask use is getting obligatory
- Extension of curfew in many countries
  - Increased risk of social unrest

Customer Effects

The pandemic is causing a strong shift in customer habits. Due to the increased risk in the older population the previously technology avert part of the population is now getting familiar with online shopping and delivery services.

Short-term

- Panic buys / hoarding
- Customers fear of infections
  - Online shops and delivery services booming
  - Increased use of gloves and masks
  - High security need
    - High acceptance of public health regulations

Mid-term

- Shift from stores to online retail
- Security need is a top decision factor

Legal and Security

A surge of different regulations has to be applied from national to county level in shortest amount of time. As curfews are extended the tension in the population grows.

Legal requirements

- Limitations of simultaneous customers
- Minimum distance enforcement
- Increased sanitation requirements
- Mask use enforcement

Increasing demand for security services

- Required to enforce health regulations
- High monthly costs
- High demand
    - Lack of availability
        - Increasing costs

Outlook

After infection rates are under control non-critical stores will reopen to reduce the impact on the economy. Yet many restrictions will still apply until a vaccination is widely available to reduce the risk of a second outbreak.

Further increased demand for security services

- Very high demand
    - Priority to system critical retail shop
    - Lack of availability
    - Prices will further increase

Impact on non-critical retail stores

- Reduced purchase power of customers
- Risk of infections
    - Many customers will still avoid non-critical retail stores
    - Increased safety and health regulations

=> Increased costs @ lower revenue

Effect on customers

Solutions

Retail shops are required to implement regulatory requirements and especially non-critical stores need to gain customer trust by efficiently implementing a "safe shopping" policy

AI solutions for retail stores

Safe Shopping
- People count
  - Limit simultaneous customers in the store
    - Publish customer number on website
- Social distancing
  - Validate distancing measures and layout
- Enforce mask use
  - Can be used to control automatic doors
- Adaptive sanitation
  - Highly occupied areas can be cleaned more often

Supply
- Monitor high demand goods in the shelves

Other Use Cases of AI for Retail

Camera based AI Systems can be used for many other use cases

Shelve monitoring

- Timely refill of high demand goods

Optimize good placement

- Monitor the customer flow to optimize good placement

Evaluation of Marketing Campaigns

- Monitor customer reactions to incentives

Advantages

Gaining customer trust will be a significant competitive advantage during a pandemic

Safety

- Protection of customers and employees

Legal

- Compliance with public health regulations

Branding

- Gain customer trust by "Safety first" policy
- Competitive advantage

Costs

- Personal can be used more efficiently
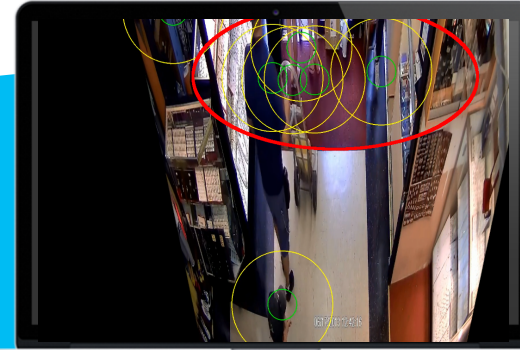 - Reduced cost for sanitation and security

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Retail Solutions
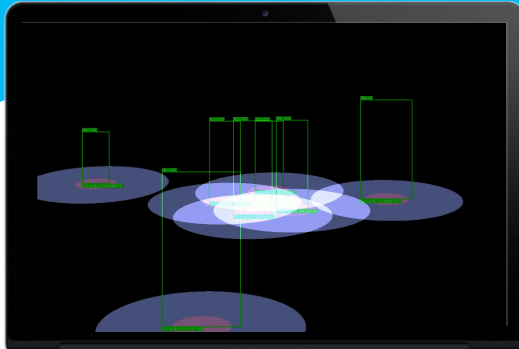
Surveillance Camera View

Monitor your social distancing measures
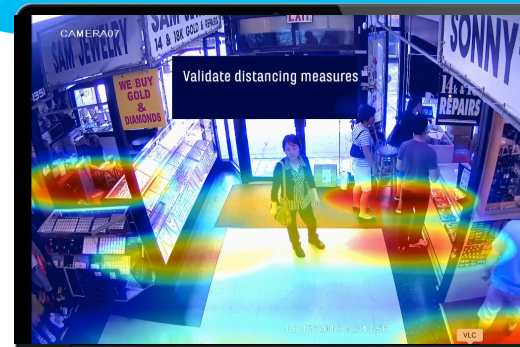
Surveillance Camera Top View

Locate areas where minimum distances are not kept

Customer Count

Track the number of customers inside store and validate social distancing measures

Occupation Map

Track space usage for adaptive sanitation or validation of distancing

Hardware

Flexible platform and easy deployments

- High performance for real-time AI applications
  - Low power consumption (15-50W)
    - Low heat, no active cooling
  - No mechanics
    - Simple integration and reliable operation
  - Remote maintenance possible via VPN
    - No IT personal required
- Updatable via 4G
  - No network integration required
  - New regulations and requirements
- Use existing surveillance cameras or custom cameras
  - No Cloud
    - GDPR-Compliant
- Flexible
  - Supports numerous sensors / cameras

System setup

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Remote administration

4G

AI Object Detection
Anonymization
(optional)

Camera

Retail store

Thanks!

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Evotegra GmbH
Kreuzwingert 11
55296 Gau-Bischofsheim
Germany
www.evotegra.com
Mail: info@evotegra.com
Telephone: +49 171 4024242