Customized deep neural network (DNN) accelerator for IC-level privacy and security protection to be embedded in smart camera.

Keywords:
- Smart city, smart cameras, privacy, home security, DNN, face detection, object recognition, face blur, smart home

Problems addressed

Most of the cameras record video without any filter, it has the privacy concern from the public. It would harm the rights of personal privacy. Furthermore, those records are enormous raw data, it is hard to use in the application of smart city. The data require many resources to reallocate and clean up for application.

ASTRI has developed a customized DNN accelerator for privacy and security protection to be embedded in smart cameras for deployment in smart home and smart city applications. The DNN has face detection and object recognition for protecting the privacy by blurring the face.
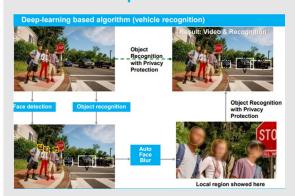
Innovations

The smart camera has improved the privacy and home security for deployment in smart home and smart city applications. The innovation also includes the followings:

- **DNN algorithm** for privacy protection
- **Face detection** for detecting the person with the privacy protection
- **Object recognition** for detecting the object with the privacy protection
- **Auto face blur** for protecting the personal face

Key impact

- Reduced the risk of illegal tracking
- Protected personal image by blurring the face
- Reduced workload for object detection
- Faster image processing for the privacy protection

Innovation snapshot

Project completed
- 2022

Applications
- Smart camera for smart city
- Security camera
- Smart home camera

Patent(s)
- N/A

ASTRI Patent Search

Commercialisation opportunities
- IP licensing
- Technology co-development

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