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shaping tomorrow with you

Advanced Frontend Media Processing Technologies

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Fujitsu's Vision

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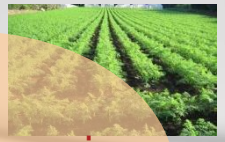
Enabling a Human-Centric Intelligent Society

Food | Environment | Energy | Health | Safety | Security | Business Efficiencies





Media Processing Technologies

Real world

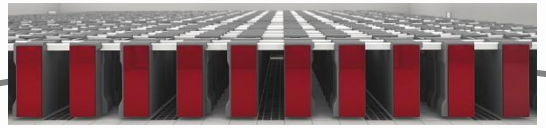
Media Processing Technologies

Various Kinds of Information from Human Awareness and Sensing Devices

Media Processing Technologies

New Services & Solutions

New Services & Solutions


Cloud Fusion

※ICT=Information Communication Technology

Real-world value creation through human-centric ICT

Exhibits from Media Processing Systems Labs

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- Advanced Frontend Media Processing Technologies:
  - Visual Assistance for Drivers with Camera & Laser
  - Driver Drowsiness Management
  - Low-cost Gaze Tracking and Gaze Analytics
  - Next-Gen Fingertip Touch-based User Interface

Visual Assistance for Drivers with Camera & Laser

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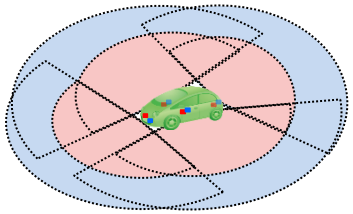
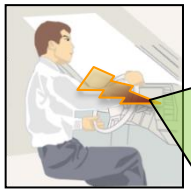
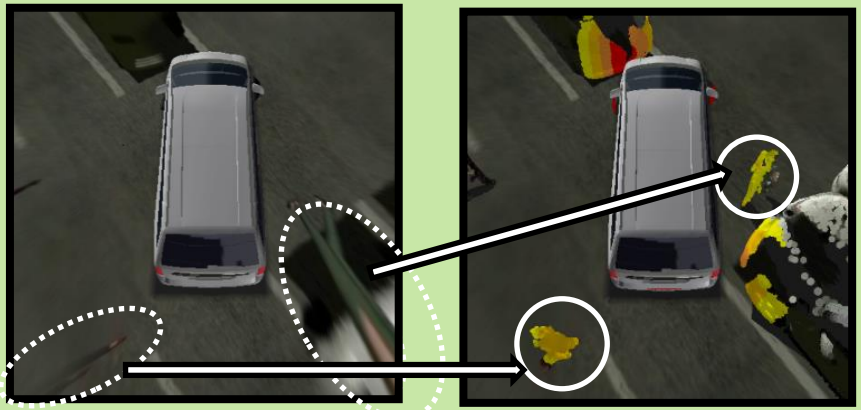
3D image synthesis integrating dense ranging data visualizes the world accurately and effectively for safer driving even in complicated situations



Captured by
4 cameras (blue)
and 4 lasers (red)

3D image synthesis (In-vehicle system)





Conventional:
4 cameras only,
large distortion

Proposal:
4 cameras + 4 lasers,
no distortion,
highlights nearby objects

Visualizes the surroundings

★ **Unique 3D laser ranging technology**

- Super wide-angle (H:170 deg., V:100 deg.)
- Fine resolution (0.6 deg., 320x240 dots)

(proptotype)

DEMO: 3D Image Synthesis

- “No distortion” enables drivers to intuitively sense the distance to objects
- Highlighting nearby objects is helpful to instantly discern collision risks

※The input data was generated by CG.

DEMO: 3D Image Synthesis

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- A variety of views from any viewpoint and smooth transition of views

※The input data was generated by CG.

Driver Drowsiness Management

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Managing quality of sleep in daily life provides healthier working environments in many businesses including logistics

- Wearable ear-clip sensor that detects drowsiness level based on our newly developed heart rate variability analysis, robust to noise in driving
- Contact-free sleep assessment sensor using microwave at home, enables to detect the user status(sleep/awake)

Fleet management

+ Sleep Assessment & Management

Drowsiness detection sensor

Sleep quality assessment sensor

DEMO: Drowsiness Detection

Ear-Clip sensor

Bluetooth

Mobile App

Pulse wave

Drowsiness Level

Showcasing the demo at our booth, please drop by.

Low-cost Gaze Tracking and Gaze Analytics

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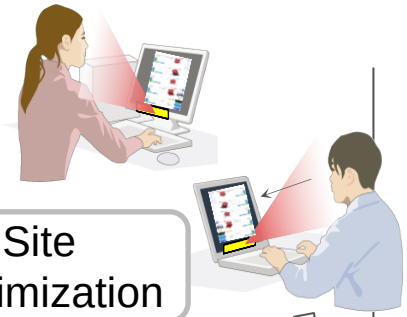
ICT services with gaze tracking can provide natural user interface and also enable proactive supports based on user interest inferred by gaze analytics

- Low-cost & compact to embed into various hardware and environments
- Robust gaze tracking in various lighting conditions/blurry images

Compact gaze tracking device

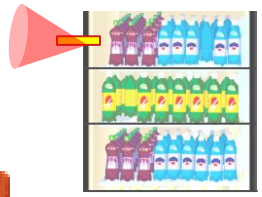


Site Optimization

Video Ratings

Visualizing aggregated gaze data

Processing gaze data from multiple users



Product Interest Levels

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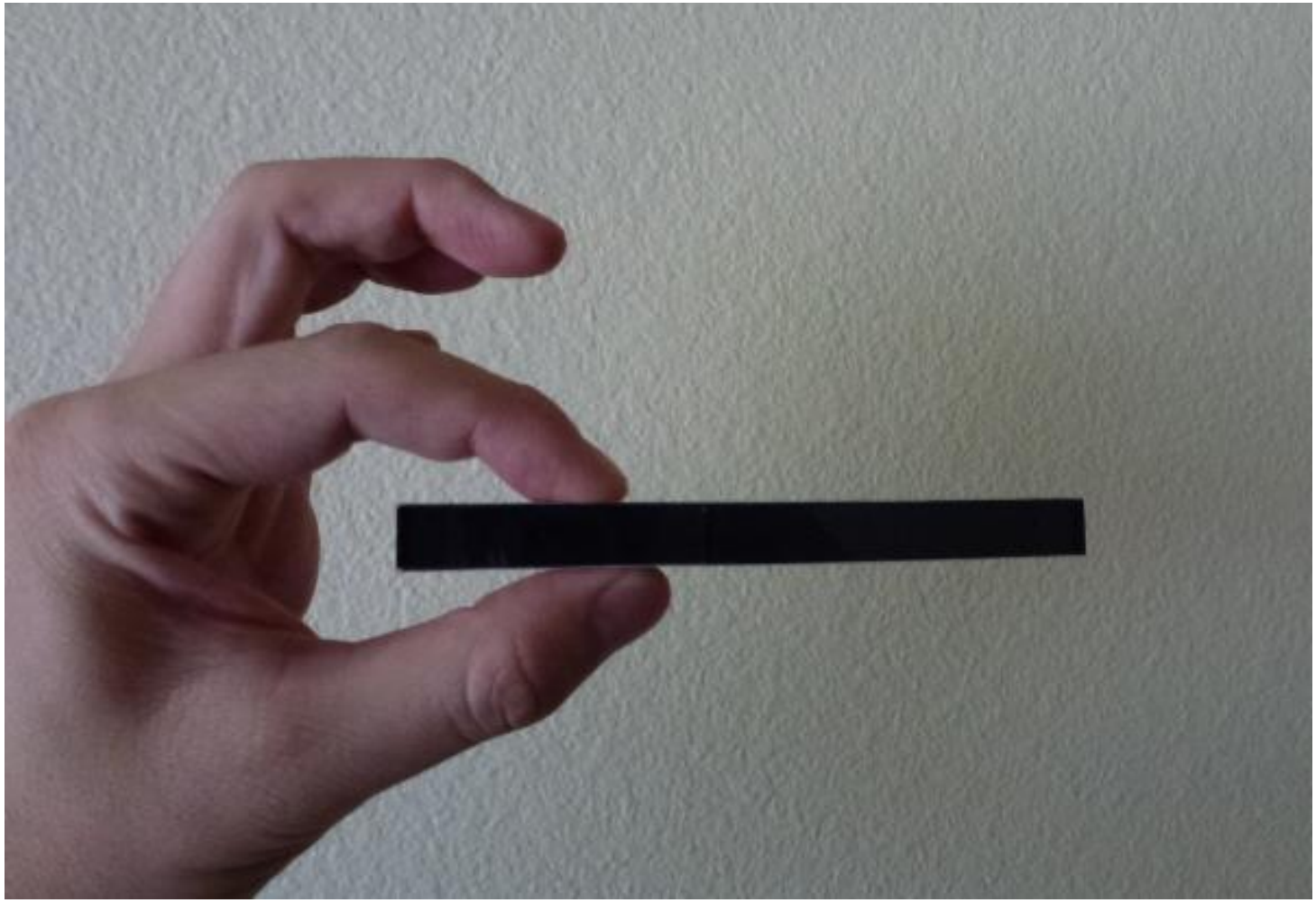
Aiming to create the world's smallest gaze tracker



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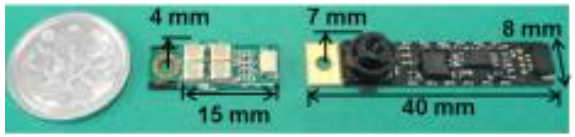

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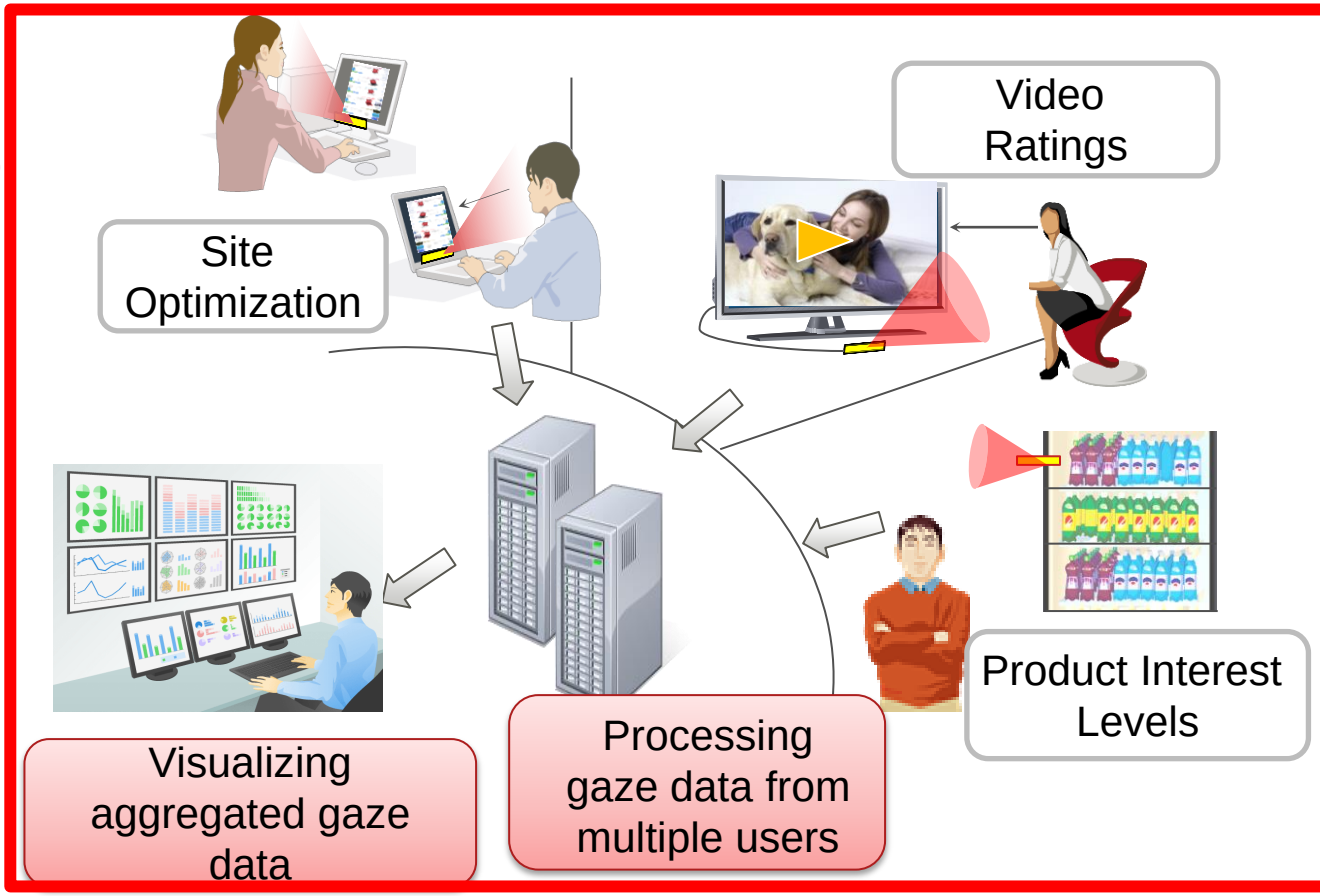

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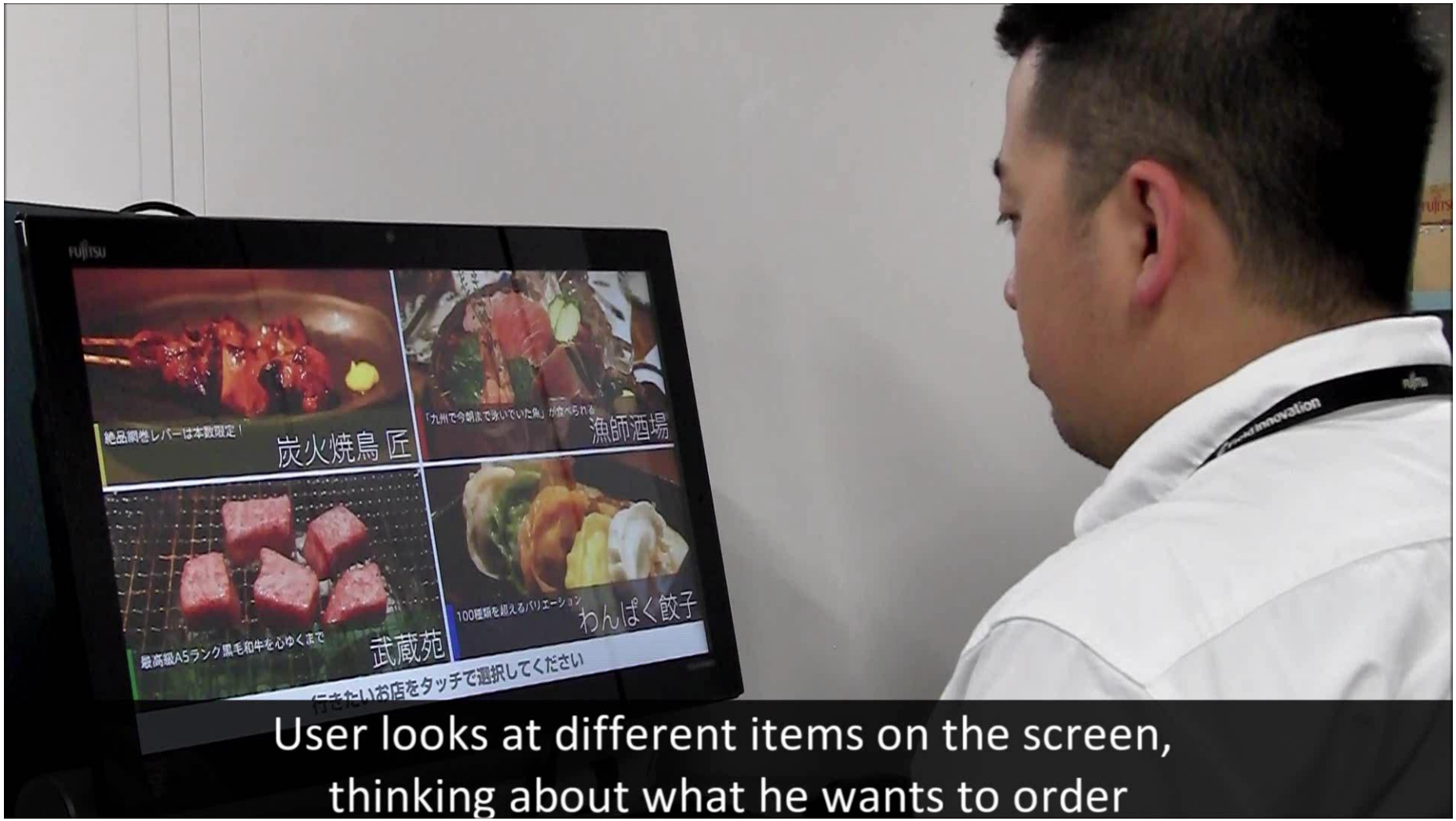

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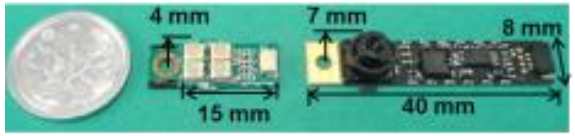

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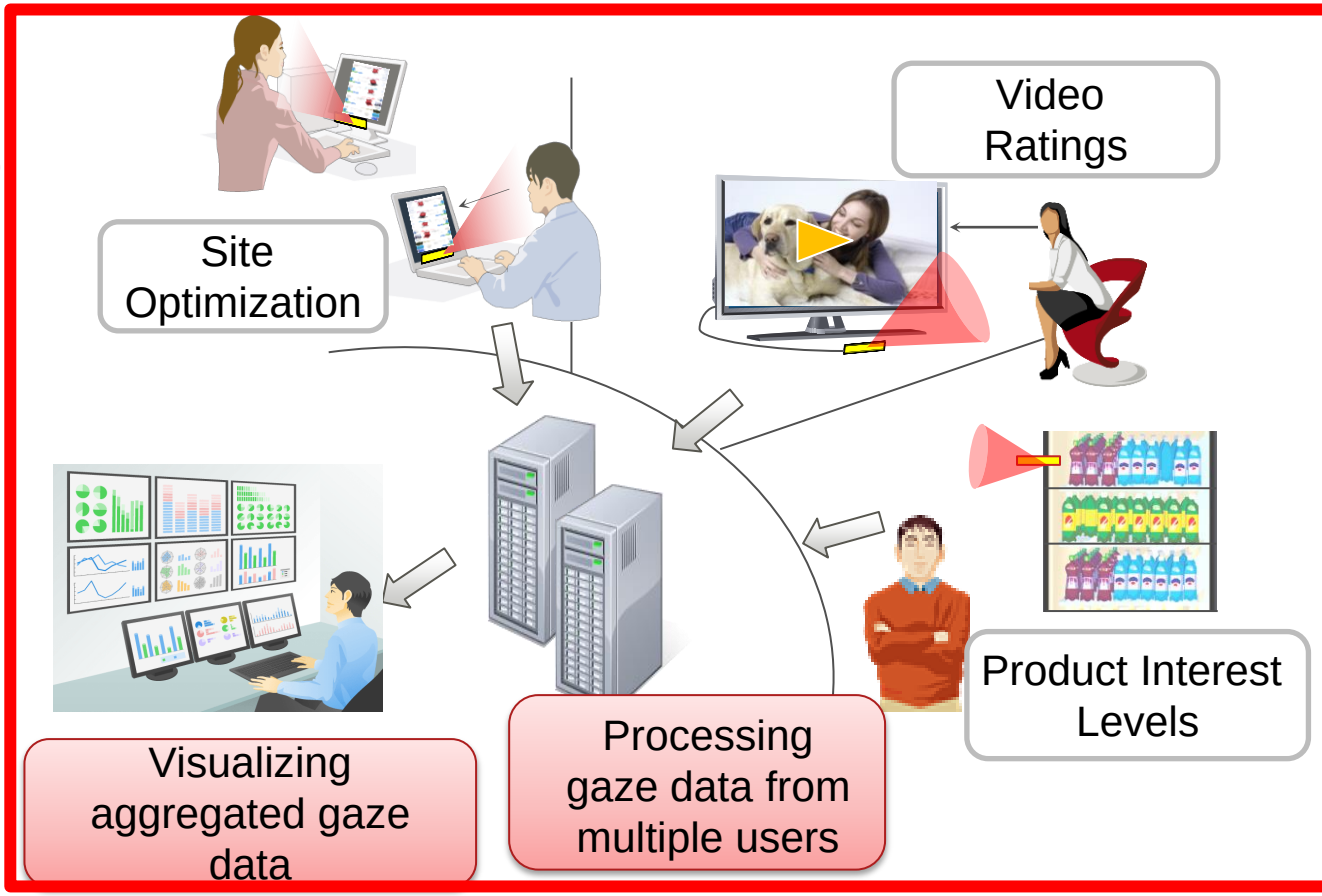

Next-Gen Fingertip Touch-based User interface

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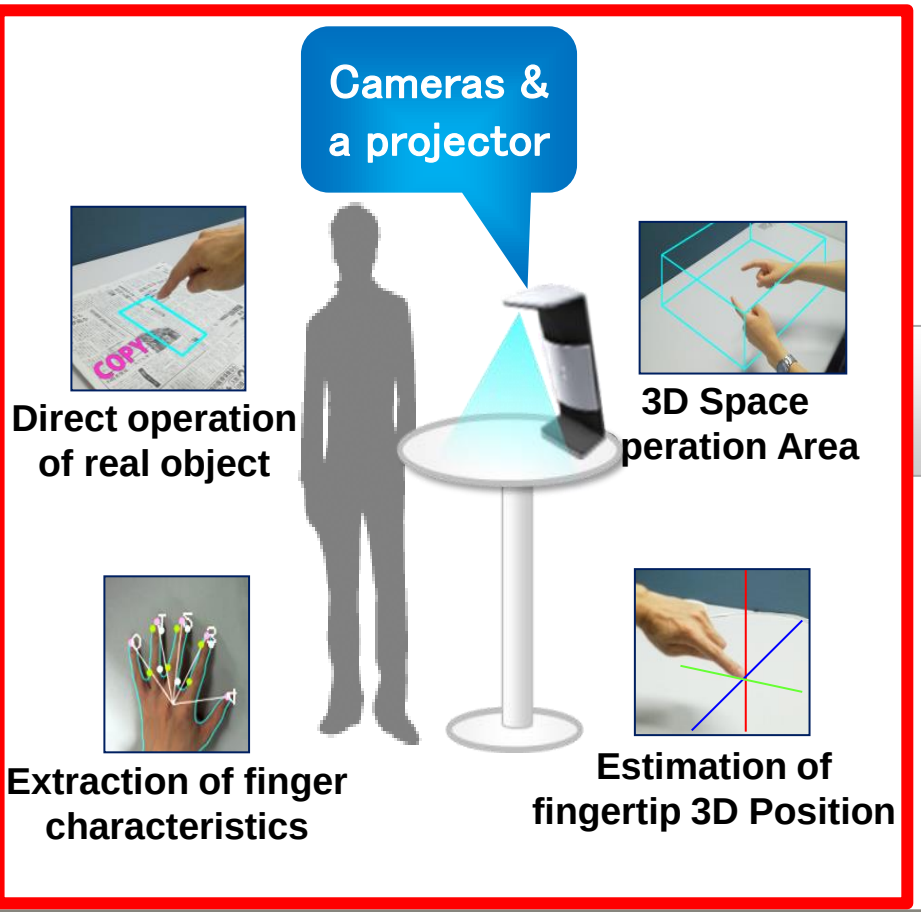
An intuitive user interface enabling users to perform ICT operations by touching real world objects with fingers, creates new effective usage of ICT

- Highly accurate, high-speed, fingertip recognition & localization and projection of tangible information



Applications

Presentation with tangible information on paper media

Showcase with tangible information on products

Brainstorming with hand-written and electronic notes

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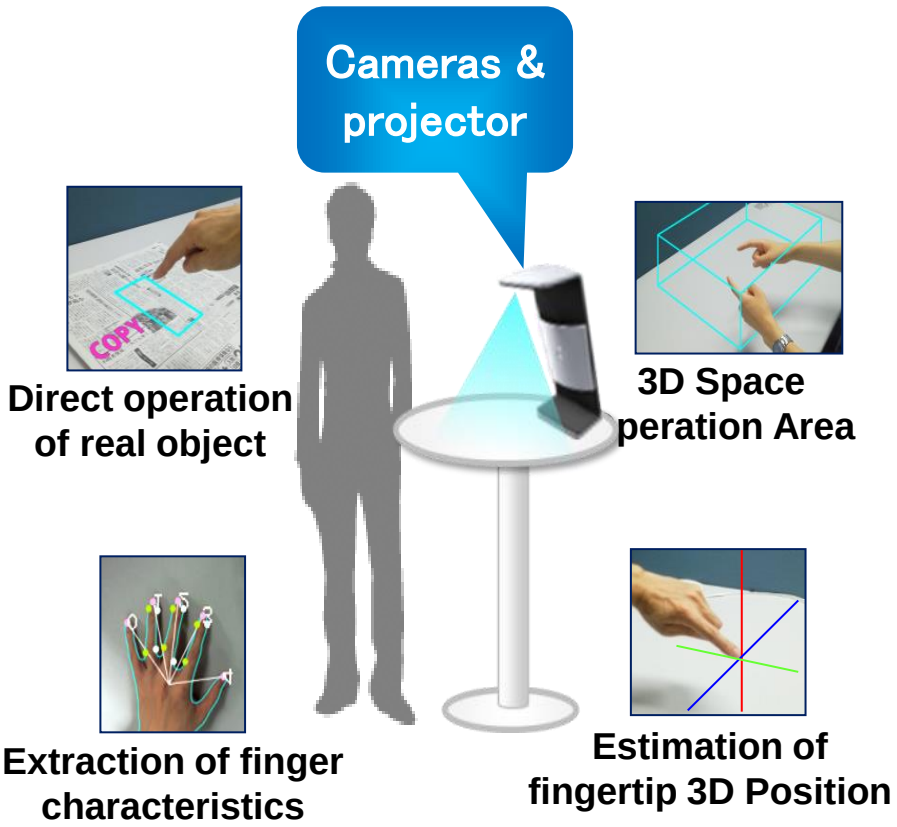

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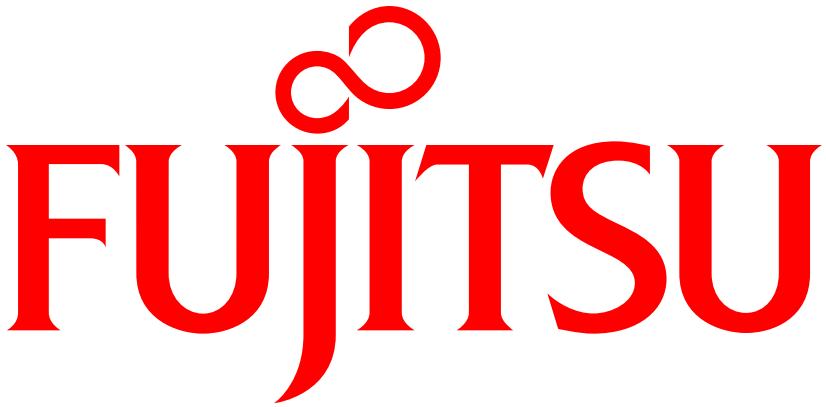

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