Hyperspectral imaging with a metalens and AI
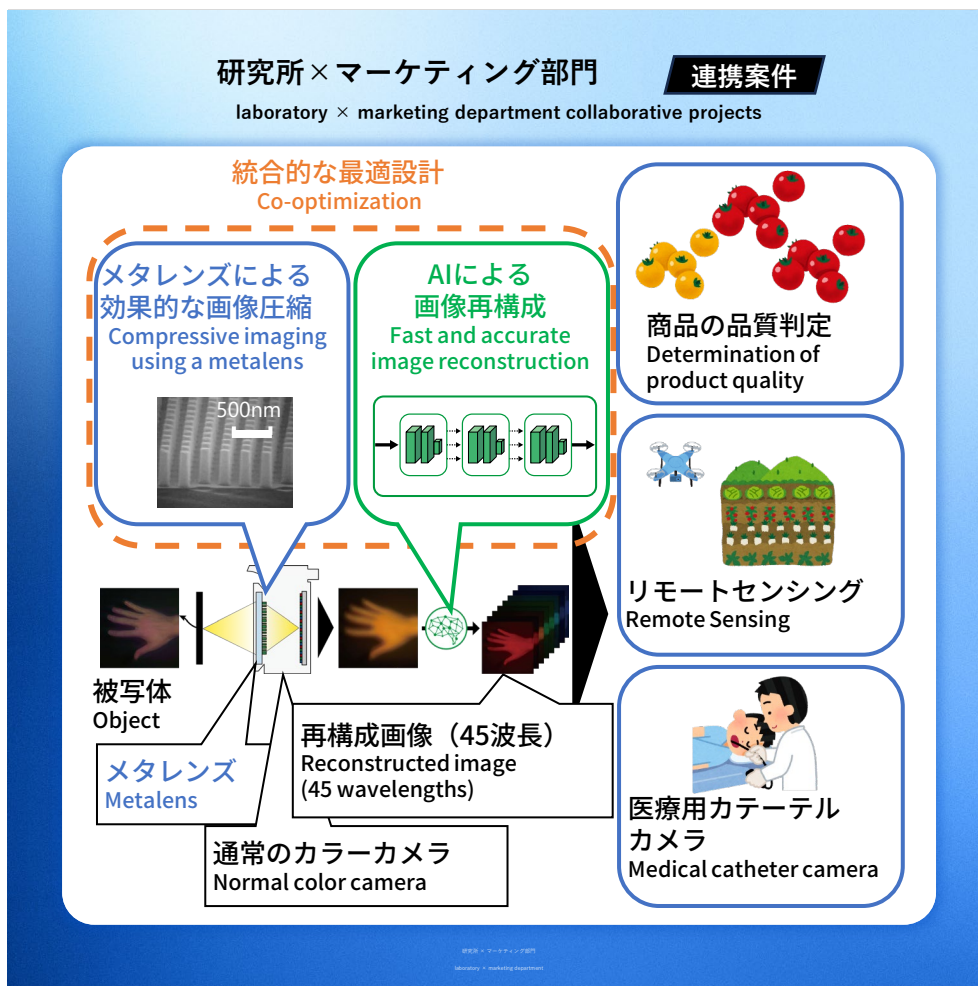
By simply attaching a metalens, an "ordinary camera" becomes a "camera that can see the nature of things"

#Customer Experience Value Creation #Productivity Improvement

///Technical Issue

Spectral images, which can visualize properties difficult to discern with the naked eye, require complex cameras and tens of seconds to capture.

///Research Goal

We aim to enable high-speed spectral video imaging with a compact and simple device, making it applicable in industrial fields where use has previously been difficult.

---Technology

By modeling both the metalens and image reconstruction using deep learning to jointly optimize their design through our unique technology, we maximize imaging accuracy.

---Novelty

By simply replacing the lens of a normal color camera with a metalens, we have enabled spectral imaging that simultaneously achieves the same size, resolution, and frame rate as a normal camera, which was previously difficult to accomplish.

---Applicable Business

In the retail industry, application on product quality assessment (around 2029)
In precision agriculture, application on estimating crop growth conditions (around 2032)
In the medical field, application on medical catheter cameras (around 2040)

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