

**Overview** (Augmented Reality, Next Generation Interface, Computer Graphics)

Our vision is to introduce Augmented Reality into the everyday lives of everyone on this planet. In order to achieve our vision, it is imperative to merge three currently distinct research fields into one: Computer Graphics, Computer Vision, and Human-Computer Interaction.

**Research topics**

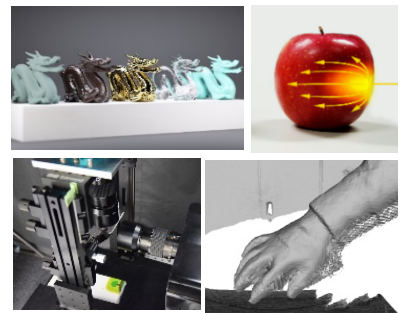
- ★ Appearance control using projector-camera system
- ★ Augmented reality in sports
- ★ Markerless augmented reality
- ★ AR authoring system for work support

**Optical Media Interface Laboratory (Mukaigawa Lab.)****Overview** (Computer Vision, Computer Graphics)

The research topics in our laboratory include **Computer Vision** to understand scenes according to visual information obtained by a camera, and **Computer Graphics** to generate rich visual information for human. We are aiming to realize a new interface that enables human and machine to interact through optical media based on cutting edge researches.

**Research topics**

- ★ Understanding of object shape and material by analyzing reflection and scattering.
- ★ Breaking the limitation of camera performance by computational photography.
- ★ Synthesizing realistic computer graphics by simulating light transport.

**Ambient Intelligence Laboratory (Hagita Lab.)****Overview** (Ambient Intelligence, Computer Vision, Human Robot Interaction)

Our goal is realization of a safe, secure and comfortable life space for all members of society through the application of **ambient intelligence**. Ambient intelligence which means our life space has intelligence is developed by real world sensing, knowledge structuring and interaction for humans.

**Research topics**

- Human comfortable navigation for autonomous vehicle
- Safe map generation for personal mobility
- Activity estimation by high level semantic life log
- Trust relationship building with robot by long-term interaction
- Common-sense modeling for service robot in public space

**Social Computing Laboratory (Aramaki Lab.)****Overview** (Social Media, Database, Medical Informatics, Natural Language Processing)

Our laboratory is newly built to develop a new academic field, which can overlook all the way from the basic science to the real world applications. Our core technology is natural language processing, but we aggressively employ and collaborate with other fields in order to find the extensive applications mainly in medical and healthcare fields. Join us, and let's break new ground together.

**Research topics**

- ★ Twitter-based disease surveillance (Influenza, Hay fever, etc.)
- ★ Language ability measurement
- ★ Natural language based Medical AI

