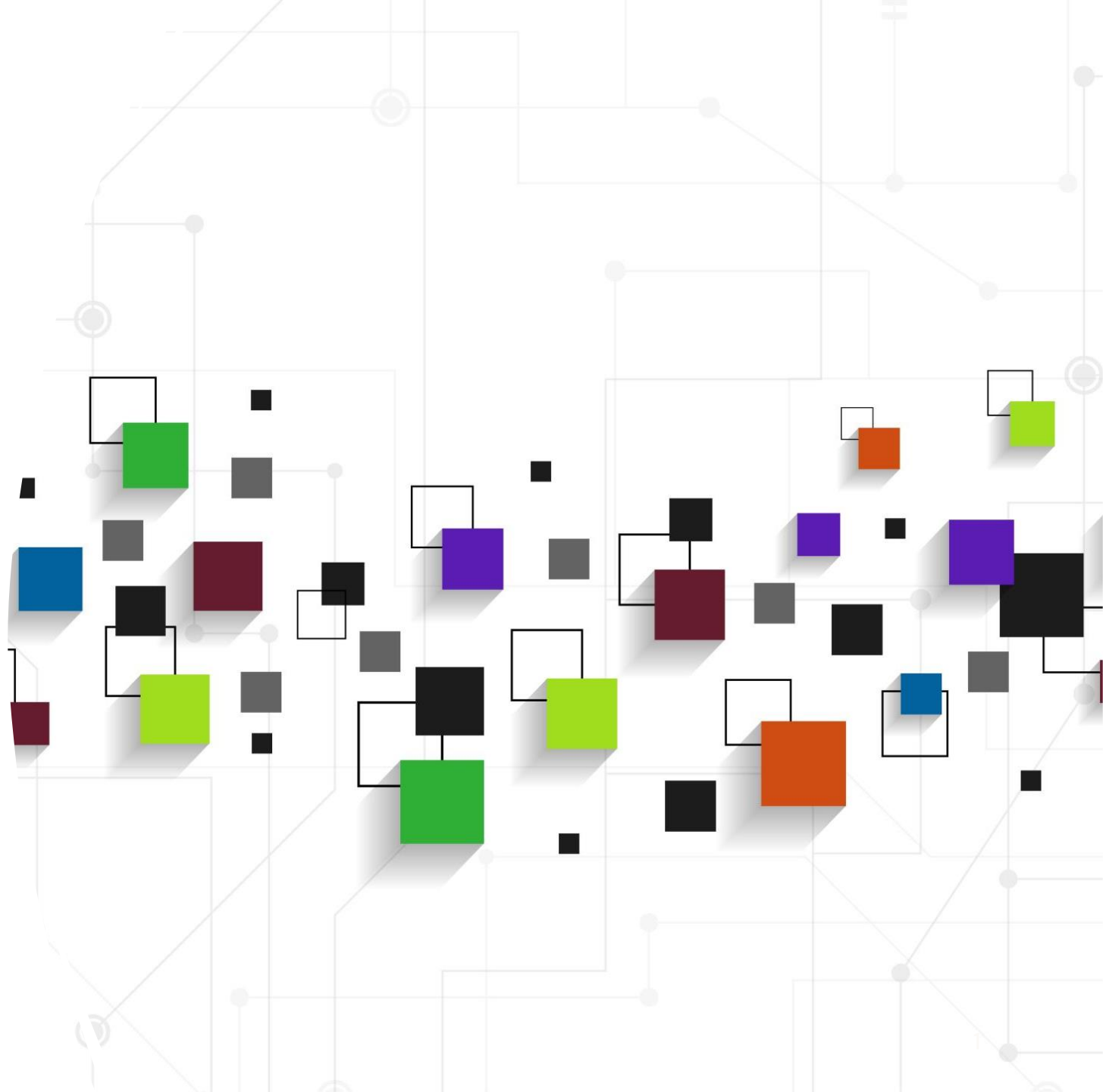# 증강현실

(2023. 10. 04.)
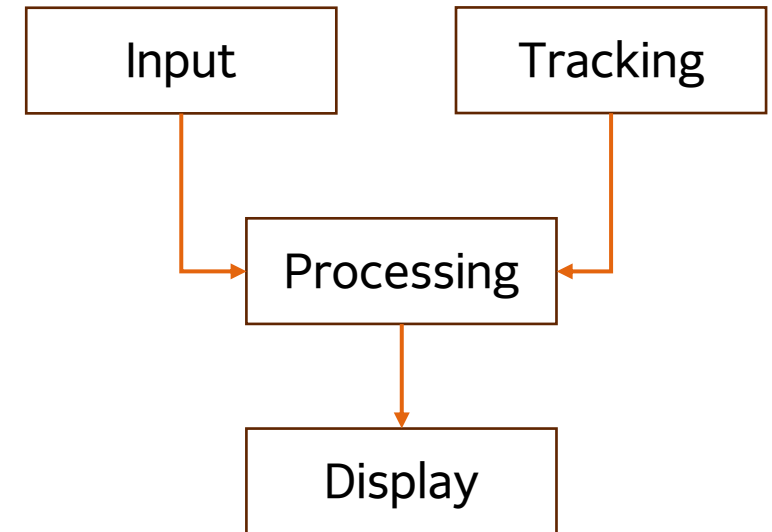
이 종 원
(jwlee@sejong.ac.kr)
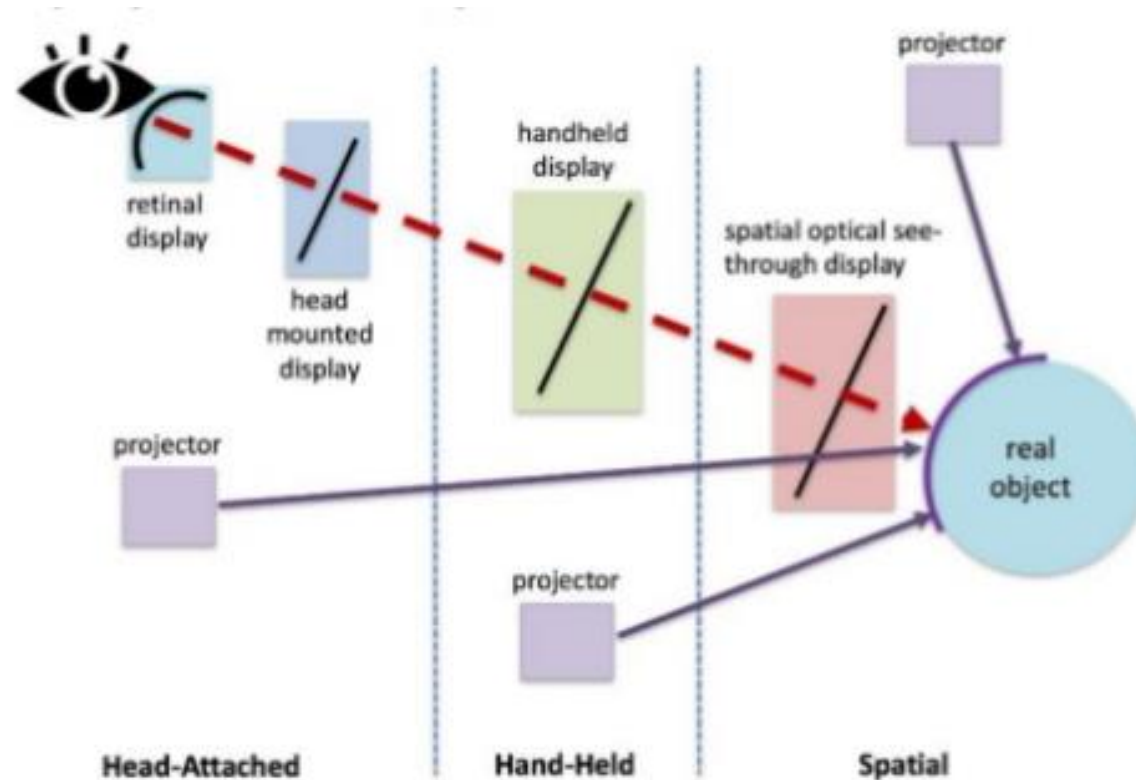
Technology Requirements

✓Combining real and virtual images

- Needs display technologies

✓Interactive in real-time

- Needs input and interactive technologies

✓Registered in 3D

- Needs viewpoint tracking technologies

Input		Tracking

Processing

Display

AR Displays

Display Taxonomy

Bimber, O., & Raskar, R. (2005). *Spatial augmented reality: merging real and virtual worlds*. CRC press.

Display Technologies

✓Head attached

- Head mounted display/projector

✓Body attached

- Handheld display/projector

✓Spatial

- Spatially aligned projector/monitor

Handheld AR

✓Camera + display = handheld AR

✓Mobile phone/tablet display

Spatial Augmented Reality

✓Project onto irregular surfaces

- Geometric registration

- Projector blending, high dynamic range
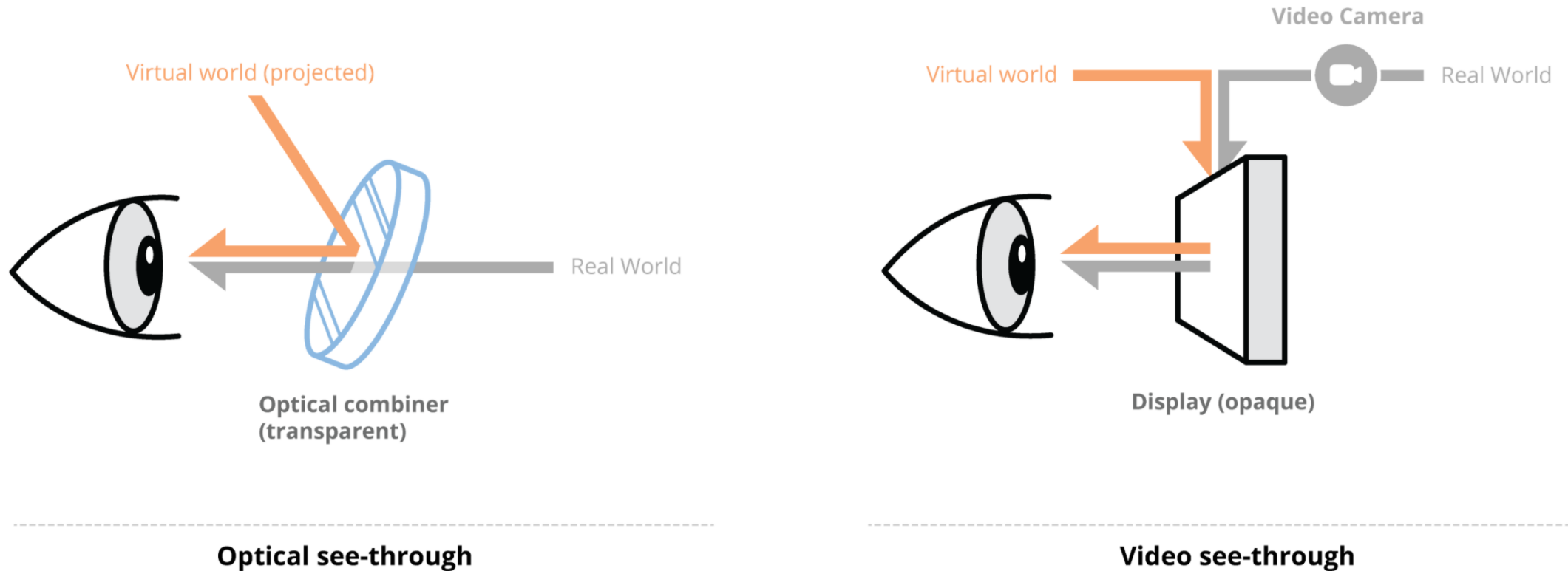
✓Book: Bimber, Rasker "Spatial Augmented Reality"

Head Mounted Displays (HMD)

✓ Display and optics mounted on head

✓ May or may not fully occlude real world

✓ Provide full-color images

✓ Things to considerations

- Wearability

- Brightness

- Power consumption

- Resolution, Field Of View(FOV)

- Cost

Optical See-Through vs. Video See-Through HMD

Virtual world (projected)

Real World

Optical combiner
(transparent)

Optical see-through

Video Camera

Virtual world

Real World

Display (opaque)

Video see-through

VST vs. OST HMD

View Through Optical See-Through HMD

https://youtu.be/ceMHXTxhY2w

Mixed Reality by Varjo

https://youtu.be/L0sg-3EGbZs

Q/A