SNU Reality Lab

Dept. of Computer Science and Engineering
at Seoul National University

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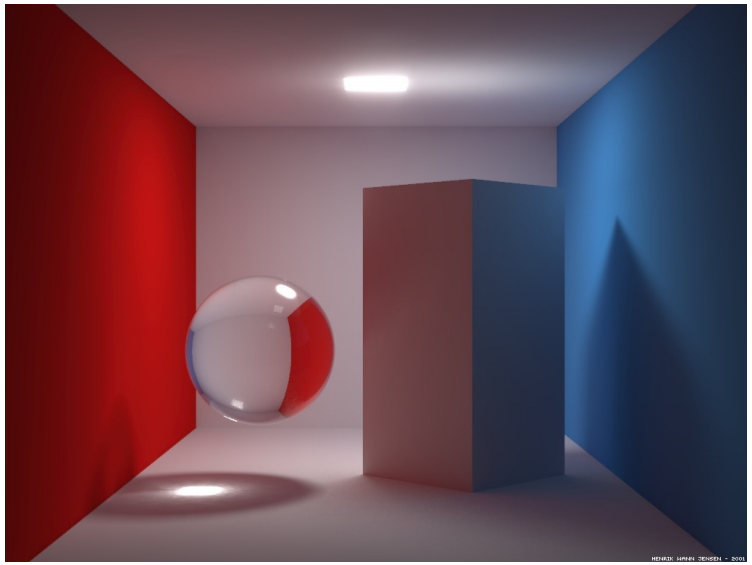
What we do

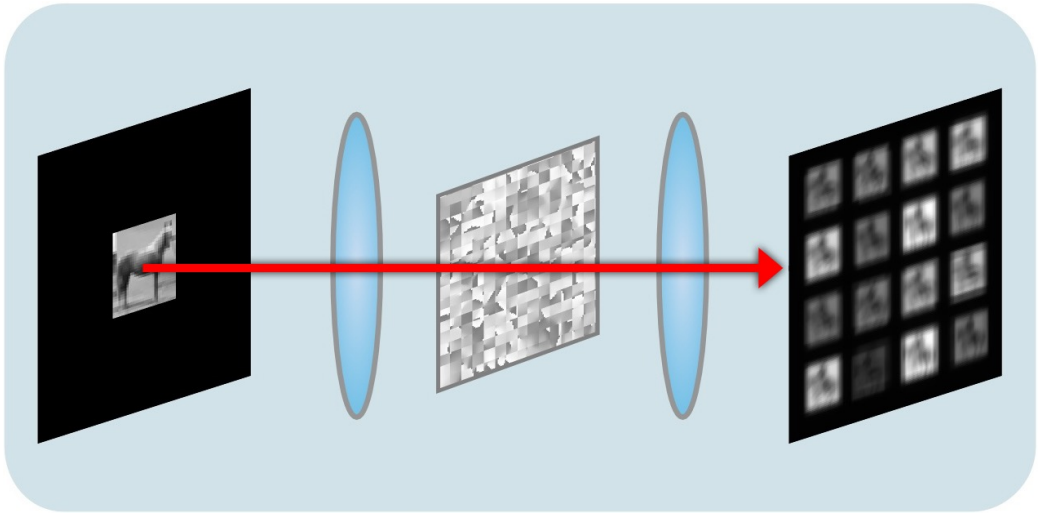
- We design next-generation physical interfaces that connect humans, machines, graphics, and AI agents, enabling seamless interactions among them. These have a wide range of applications across spatial computing, scientific imaging, robotics, fabrication, as well as computer graphics and vision.

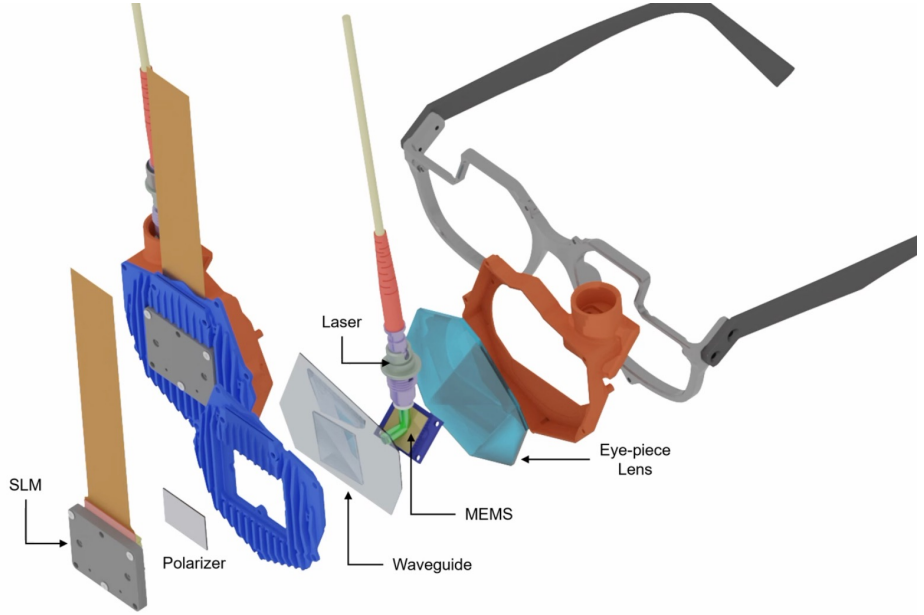
Research topics (1):
Physical / Perceptual realism



- We build cameras, inverse rendering, compression, reconstruction, and display algorithms that reproduce reality flawlessly, leveraging physics-based modeling, rendering and simulation, as well as generative models and vision science.

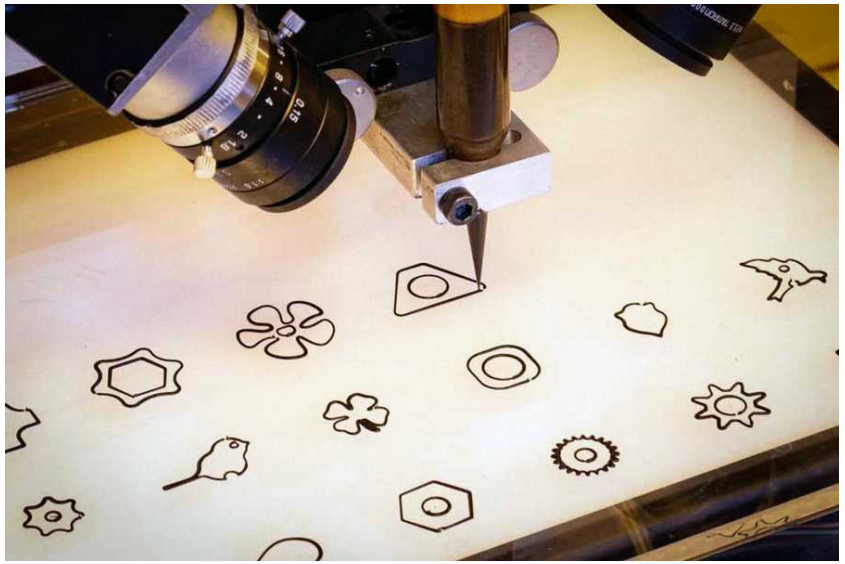
Research topics (2):
Computational imaging and displays





- We build computational imaging and display systems that identify efficient models for high-dimensional visual data by combining physics and AI in a meaningful and complementary manner, and develop optical devices that exploit these models for robust sensing and visualization.

Research topics (3):
Computational design and fabrication



- We build computational methods for the design of cyber-physical systems, unifying continuous, discrete, and hybrid representations with differentiable physics and optimization. We also explore novel digital fabrication processes for these systems that redefine how humans and generative AI create functional and adaptive structures.

Join us!

- I’m super excited to meet you all next year! I’ll be building a team of enthusiasts who strive to push the boundaries of these technologies at the intersection of artificial intelligence, optics, electronics/robotics, and applied vision science.

- I’m particularly looking for students with a strong interest in physics (optics and robotics) **and** AI (generative modeling). If you think you’d be a good fit, please reach out to me at: suyeon@stanford.edu