

RYOTA MAEDA

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Research Interests

- Computer Vision
- Polarimetric Imaging
- Computer Graphics
- Light Transport Analysis
- Computational Imaging
- 3D Reconstruction

Education

University of Hyogo

Ph.D. of Engineering

Apr. 2022 – Present

University of Hyogo

Master of Engineering

Apr. 2020 – Mar. 2022

University of Hyogo

Bachelor of Engineering

Apr. 2016 – Mar. 2020

Publications

Hyperspectral Polarimetric BRDFs of Real-world Materials

Dec. 2025

Yunseong Moon, **Ryota Maeda**, Suhyun Shin, Inseung Hwang, Youngchan Kim, Min H. Kim, Seung-Hwan Baek
SIGGRAPH Asia 2025

Event Ellipsometer: Event-based Mueller-Matrix Video Imaging

Jun. 2025

Ryota Maeda, Yunseong Moon, Seung-Hwan Baek
IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR), *highlight*

Dense Dispersed Structured Light for Hyperspectral 3D Imaging of Dynamic Scenes

Jun. 2025

Suhyun Shin, Seungwoo Yoon, **Ryota Maeda**, Seung-Hwan Baek
IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR)

Polarimetric Light Transport Analysis for Specular Inter-reflection

May. 2024

Ryota Maeda, Shinsaku Hiura
IEEE Transactions on Computational Imaging, 2024

Refinement of Hair Geometry by Strand Integration

Oct. 2023

Ryota Maeda, Kenshi Takayama, Takafumi Taketomi
Computer Graphics Forum (Proceedings of Pacific Graphics 2023)

EpiScope: Optical Separation of Reflected Components by Rotation of Polygonal Mirror

Dec. 2021

Ryota Maeda, Shinsaku Hiura
SIGGRAPH Asia 2021 Technical Communications

Research Experience

POSTECH Computational Imaging Group

Mar. 2024 – Feb. 2025

Visiting Research

Mentors: Prof. Seung-Hwan Baek

CyberAgent AI Lab

Aug. 2022 – Sep. 2022

Research Intern

Mentors: Dr. Kenshi Takayama and Dr. Takafumi Taketomi

NAIST Optical Media Interface Lab

Aug. 2018

Research Intern

Mentors: Prof. Hiroyuki Kubo and Prof. Yasuhiro Mukaigawa

Software on GitHub

Polanalyser | ⭐ null stars

Polarization image analysis tool. Demosaicing, Stokes vector, Mueller matrix.

structuredlight | ⭐ 160 stars

Generate and Decode structured light. Binary, Gray, XOR, Ramp, Phase-Shifting, Stripe.

EasyPySpin | ⭐ 108 stars

cv2.VideoCapture like wrapper for FLIR Spinnaker SDK.

Skills

Programming: Python, C++

Hardware Development: Electronic circuit design, Embedded systems, 3D CAD

Visual Content Creation: Photography, Image processing, Scientific illustration

Language: Japanese (native), English (advanced)