Ryota Maeda

Himeji, Hyogo, Japan
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Research Interests

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

Education

University of Hyogo **Apr. 2022 – Present**
Ph.D. of Engineering

University of Hyogo **Apr. 2020 – Mar. 2022**
Master of Engineering

University of Hyogo **Apr. 2016 – Mar. 2020**
Bachelor of Engineering

Publications

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 | ☆188 stars
Polarization image analysis tool. Demosaicing, Stokes vector, Mueller matrix.

structuredlight | ☆156 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)