

# RYOTA MAEDA

Himeji, Hyogo, Japan

[✉ maeda.ryota.elerac@gmail.com](mailto:maeda.ryota.elerac@gmail.com)

[LinkedIn](https://www.linkedin.com/in/ryota-maeda-elerac)

[GitHub](https://github.com/elerac)

## 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 | ⭐ 191 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

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**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)