

TOSHINORI YAMAUCHI

Current Positions

- 2019–Present **Senior Researcher**, *Hitachi, Ltd.*, Japan.
2024–Present **Doctoral Student**, *Chiba University*, Chiba, Japan.

Education

- 2024–Present **Ph.D. in Graduate School of Informatics**, *Chiba University*.
Supervisor: Prof. Kazuhiko Kawamoto
2017–2019 **M.S. in Graduate School of Arts and Sciences**, *The University of Tokyo*.
Supervisor: Prof. Takeru Suzuki
2013–2017 **B.S. in Information Engineering**, *Chiba University*.

Research Interests

Explainable AI for computer vision, faithful textual explanation, visual explanation, human-interpretable AI, and trustworthy machine learning.

Publications (selected)

Conference Proceedings

- 2026 Toshinori Yamauchi, Hiroshi Kera, and Kazuhiko Kawamoto. Zero-shot textual explanations via translating decision-critical features. In *Findings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2026.
2026 Toshinori Yamauchi, Hiroshi Kera, and Kazuhiko Kawamoto. Explaining object detectors via collective contribution of pixels. In *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2026. Highlight.
2024 Toshinori Yamauchi. Spatial sensitive grad-cam++: Improved visual explanation for object detectors via weighted combination of gradient map. In *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, pages 8164–8168, June 2024. Oral, Spotlight Award.
2022 Toshinori Yamauchi, Kentaro Ohira, and Takefumi Kakinuma. Positive/negative decision via outlier detection towards automatic performance evaluation for defect detector. In *International Symposium on Semiconductor Manufacturing (ISSM)*, pages 1–4, 2022. Oral, Best Paper Award.
2022 Toshinori Yamauchi and Masayoshi Ishikawa. Spatial sensitive grad-cam: Visual explanations for object detection by incorporating spatial sensitivity. In *IEEE International Conference on Image Processing (ICIP)*, pages 256–260, 2022. Oral.

Journal Articles

- 2026 Toshinori Yamauchi. Spatial sensitive grad-cam++: Towards high-quality visual explanations for object detectors via weighted combination of gradient maps. *Computer Vision and Image Understanding*, volume 264, page 104658, 2026.
2025 Toshinori Yamauchi. Spatial sensitive grad-cam: Toward instance-specific explanations for object detectors by incorporating spatial sensitivity. *IEEE Access*, volume 13, pages 202086–202102, 2025.

- 2023 Toshinori Yamauchi, Kentaro Ohira, and Takefumi Kakinuma. Positive/negative decision via outlier detection toward automatic performance evaluation for defect detector. *IEEE Transactions on Semiconductor Manufacturing*, volume 36, pages 527–536, 2023.

Awards & Honors

- 2024 Spotlight Award, IEEE/CVF CVPR Workshops.
- 2022 Best Paper Award, International Symposium on Semiconductor Manufacturing (ISSM).