CHIHIRO NAKATANI

PhD student at Toyota Technological Institute

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⋄ Last Update October 9, 2024

EDUCATION

Toyota Technological Institute, Japan   *April 2023 - present*
Ph.D. candidate in Electronics and Information Engineering
Advisor: Prof. Norimichi Ukita

Toyota Technological Institute, Japan   *April 2021 - March 2023*
Master of Engineering
Department of Electronics and Information Engineering
Advisor: Prof. Norimichi Ukita
(Graduated at the top of the class)

Toyota Technological Institute, Japan   *April 2018 - March 2021*
Bachelor of Engineering
Department of Electronics and Information Engineering
(Grade skipping without graduation for early entry into the master program)

RESEARCH INTEREST

My main research interests lie in computer vision and machine learning for group activity understanding, in particular, joint attention estimation, group activity recognition, gaze estimation, and self-supervised (unsupervised) learning.

RESEARCH PROJECTS

Weakly/Self-supervised Group Activity Feature Learning   *CVPR* 2024
The project tries to extract features representing group activity without group activity labels. Difference from group activity recognition in which manually defined course group activity classes are used, fine-grained group activity can be learned in this work. We proposed employing person action/feature prediction as pretext tasks to learn group activity features.
Paper link

Joint Attention Estimation Using People Attributes   *ICCV* 2023
The project focuses on estimating attention shared by multiple people. While previous methods use high-dimensional image features as cues for the estimation, we proposed using low-dimensional person attributes (e.g., location, gaze direction, and action) to consider interactions between multiple people.
Paper link

PUBLICATIONS

C. Nakatani, H. Kawashima, N. Ukita
Learning Group Activity Features Through Person Attribute Prediction
Proc. of IEEE Conference on Computer Vision & Pattern Recognition (CVPR2024), June, 2024.

C. Nakatani, H. Kawashima, N. Ukita
Interaction-aware Joint Attention Estimation Using People Attributes
Proc. of IEEE International Conference on Computer Vision (ICCV2023), October, 2023.

C. Nakatani, H. Kawashima, N. Ukita
Joint Learning with Group Relation and Individual Action Proc. of the 18th International Conference on Machine Vision Applications (MVA2023), July, 2023.

D. Mushiake, K. Otomo, **C. Nakatani**, N. Ukita
Shape Preservation in Image Style Transfer for Gaze Estimation
Proc. of the 18th International Conference on Machine Vision Applications (MVA2023), July, 2023.

C. Nakatani, K. Sendo, N. Ukita
Group Activity Recognition Using Joint Learning of Individual Action Recognition and People Grouping
Proc. of the 17th International Conference on Machine Vision Applications (MVA2021), July, 2021.

SKILLS

Programming	Python, MATLAB, HTML, CSS, JavaScript, SQL
Machine learning framework	Pytorch, Tensorflow
Software & Tools	Latex, Git

WORK EXPERIENCES

Hokkaido Nippon-Ham Fighters *April 2024 - September 2024*
Sports Analyst Internship
Topics: Action quality Assessment
Location: Hokkaido, Japan

OptFit Corporation *October 2019 - June 2020*
Engineering Internship
Topic: Human pose estimation
Location: Aichi, Japan

Activate Data Corporation *April 2019 - September 2019*
Engineering Internship
Topic: Object detection
Location: Aichi, Japan

SERVICES

Reviewer: CVPR2024

AWARDS

IEEE Nagoya Branch International Conference Research Presentation Award *April 2024*
SICE Outstanding Student Award *March 2023*

GRANTS

Scholarship offered by The Toyoaki Scholarship Foundation *April 2023 - March 2025*
Travel grant of Telecommunications Advancement Foundation *April 2024*
Travel grant of Tateishi Science and Technology Foundation *October 2023*
Toyota Foundation Scholarship, *April 2018 - March 2021*