Issei Saito

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RESEARCH INTEREST

My study is on the segmentation of human behavior using probabilistic generative models, which enables unsupervised segmentation and classification of time-series data without learning large amounts of data beforehand. While I have applied this technique to analyze human tasks so far, I am interested in intelligent robots. Then, I am considering applying this segmentation research to the movement of robots. I would like to do research in the Autonomous Intelligent Robotics Group and hopefully integrate it with my research.

EDUCATION

The University of Electro-Communications April 2023 ~ present
M.S. in Mechanical and Intelligent Systems Engineering,
Advisor: Prof. Tomoaki Nakamura

The University of Electro-Communications April 2019 ~ March 2023
B.S. in Advanced Robotics Program, Cluster II (Emerging Multi-Interdisciplinary Engineering), School of Informatics and Engineering,
Advisor: Prof. Tomoaki Nakamura

PUBLICATIONS

1. **Issei Saito**, Tomoaki Nakamura, Toshiyuki Hatta, Wataru Fujita, Shintaro Watanabe, and Shotaro Miwa. Improving the accuracy of 3D skeletal position estimation using the Viterbi algorithm. The 55th National Convention of IPSJ (Information Processing Society of Japan), Vol2, page 321~322, March 2023

2. **Issei Saito**, Tomoaki Nakamura, Toshiyuki Hatta, Wataru Fujita, Shintaro Watanabe, and Shotaro Miwa. Analysis of work behavior using GP-HSMM-based double articulation analyzer. The Annual Conference of JSAI (The Japanese Society for Artificial Intelligence), June 2023

PREPRINTS

1. **Issei Saito**, Tomoaki Nakamura, Toshiyuki Hatta, Wataru Fujita, Shintaro Watanabe, and Shotaro Miwa, Unsupervised Work Behavior Analysis Using Hierarchical Probabilistic Segmentation, The 49th Annual Conference of the IEEE Industrial Electronics Society (IECON) October 16-19, 2023. Accepted

RESEARCH EXPERIENCE

Joint research with Advanced Technology R&D Center, Mitsubishi Electric Corporation as a researcher August 2022 to now

- Research on an efficient work analysis system with our segmentation Algorithms
- The aim of developing the system is to automate work analysis that is currently done by hand and improve productivity.
- Our system automatically segments worker behavior and simplifies the understanding of any changes in behavior during repetitive tasks.
- I was in charge of improving and implementing the segmentation model.

WORK EXPERIENCE

Teaching Assistant at UEC Apr.2022 – Sep.2022

- Career Education, Prof. Toshinori Mathuki, Spring Semester 2022
- My duties involved assisting undergraduate students in learning.

SKILLS

- Programming Languages: Python, C, Ruby
- English skill: IELTS 6.0

Others

Vice-Captain on the college's American Football Team

- Act as a team leader, 2022
- Communicate well and act responsibly in a group