

# Haru Kaneko

Ph.D. student at Kyushu Institute of Technology

## PROFILE

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## SUMMARY

I am a last-year Ph.D. student at Kyushu Institute of Technology. I have strengths in analyzing and predicting the future using time series data, particularly in Healthcare and Sensor data. I also have good experience in Big Data with clustering, machine learning, deep learning, and statistical tests. Currently, I use care record data (health care records of elderly who live in the long-term care facility) to analyze and predict the elderly's future behavior. I used feature importance, SHAP, and other analyses to identify behavioral patterns and individual differences among the elderly. In addition, using this prediction I also developed a function of mobile application to give feedback about prediction results to caregivers to reduce their workload.

My research interests include:

- Predicting and forecasting human behavior using data. Prediction of behavior and health status, especially using health records.
- Analyzing individual differences in health information and learning to account for individual differences (personalization).
- Social implementation and application of machine learning. And evaluating human behavior change through applications.

## EDUCATION BACKGROUND

Key features of research:

- Automatic generation of care records with the forecast of input value and analysis of the elderly's health condition using machine learning to reduce the workload of caregivers.
- Implementation of an automatic care record generation function into the care record mobile application and evaluation of the caregiver behavior changing through feedback.
- Analyze behavior and individual differences in care record data using data visualization and clustering algorithms.

2022 - Now

**Kyushu Institute of Technology**

Doctor | Department of Life Science and Systems Engineering, Graduate School of Life Science and Systems Engineering.

2020 - 2022

**Kyushu Institute of Technology**

Master | Department of Human Intelligence Systems, Graduate School of Life Science and Systems Engineering.

2016 - 2020

# Haru Kaneko

Ph.D. student at Kyushu Institute of Technology  
**Kyushu Institute of Technology**  
Bachelor | Department of System Design and Informatics

## GRANTS AND FELLOWSHIPS

- JST SPRING, Grant Number JPMJSP2154

## EXTRACURRICULAR ACTIVITIES

I am a member of an NPO that conducts programming and robotics workshops and creates online educational materials for young people. (Currently, This NPO is underway in the making process and will be completed this October). This group also organizes the Fukuoka-prefecture qualifying round of the World Robot Olympiad (WRO), a robotics competition for elementary, junior high, and high school students.

## LANGUAGES AND SKILLS

- Native Japanese / Conversant in English
- Python / Java / PHP / Typescript, etc.
- The system for collecting the care record data uses Android (java) and a PHP server (Larave, AWS). And I am one of the developers of this system.

## PUBLICATIONS/CONFERENCES

### [2024]

[1] ( Reviewed ) Masato Uchimura, Haru Kaneko, Sozo Inoue: "Analysis of Care Records for Predicting Urination Times", Human Activity and Behavior Analysis, (2024), [Link].

[2] ( Reviewed ) Defry Hamdhana, Haru Kaneko, John Noel Victorino, Sozo Inoue: "Improved Evaluation Metrics for Sentence Suggestions in Nursing and Elderly Care Record Applications", Healthcare, Vol. 12, (2024), doi.org/10.3390/healthcare12030367.

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[3] ( Reviewed ) Defry Hamdhana, Christina A Garcia, Nazmun Nahid, Haru Kaneko, Sayeda Shamma, Tahera Hossain, Sozo Inoue: "Summary of the Fourth Nurse Care Activity Recognition Challenge - Predicting Future Activities Reviewed International journal", Human Activity and Behavior Analysis, (2023), [Link].

[4] Min Xinyi, Haru Kaneko, Sozo Inoue: "Analysis and Prediction of Mood Changes in the Elderly in Long-Term Care Facilities (In Japanese)", Distributed, Cooperative, and Mobile Symposium (DICOMO2023), (2023),

[5] ( Reviewed ) Haru Kaneko, Sozo Inoue: "Toward Pioneering Sensors and Features Using Large Language Models in Human Activity Recognition", UbiComp '23: Adjunct Proceedings of the 2023 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2023 ACM International Symposium on Wearable Computers (HASCA), (2023), doi.org/10.48550/arXiv.2306.16017.

[6] ( Reviewed ) Min Xinyi, Haru Kaneko, Sozo Inoue: "Predicting and Analyzing Emotions of Elderly People in Care Facilities", UbiComp '23: Adjunct Proceedings of the 2023 ACM International Joint

# Haru Kaneko

Ph.D. student at Kyushu Institute of Technology  
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## [2022]

[7] Haru Kaneko: "Automatic Generation of Care Record Contents Using Machine Learning (In Japanese)", Master Thesis, pp 1-55, (2022),

[8] Haru Kaneko, Masatoshi Uchimura, Koki Miyake, Sozo Inoue: "Toward Use and Analysis of Scientific Care Information System LIFE data (In Japanese)", IPSJ SIG UBI Technical Reports, Vol. 2022, No. 12, pp 1-7, (2022), Online, [Link].

[9] Haru Kaneko, and Sozo Inoue: "Analysis of Individual Differences Among Elderlies for Automatic Generation of Care Records (In Japanese)", Multimedia, Distributed, Cooperative, and Mobile Symposium 2022 (DICOMO2022), pp 1-5, (2022), Online,

[10] Min Xinyi, Haru Kaneko, Sozo Inoue: "Data Collection and Analysis of Mood of Elderly and Staff in Long-Term Care Facilities (In Japanese)", Multimedia, Distributed, Cooperative, and Mobile Symposium 2022 (DICOMO2022), (2022),

[11] Haru Kaneko, Muhammad Fikry, Sozo Inoue: "Development of Care Forecasting and Tracing Systems in Nursing and Medical Care (In Japanese)", IPSJ SIG UBI Technical Reports, pp 1-7, (2022), Tokyo,

[12] Xinyi Min, Haru Kaneko, Sozo Inoue : "Analyzing and Predicting Emotions of Elderly People in Care Facilities", International Symposium on Applied Engineering and Sciences (SAES2022), (2022),

[13] Defry Hamdhana, Haru Kaneko, John Noel Victorino, Sozo Inoue : "Toward Automatic Sentence Suggestion in Care Record Mobile Applications", International Symposium on Applied Engineering and Sciences (SAES2022), (2022),

[14] Defry Hamdhana, Haru Kaneko, Christina Garcia, Nazmun Nahid, Sayeda Shamma Alia, Tahera Hossain, Sozo Inoue : "Brief Summary of The 4th Nurse Care Activity Recognition Challenge", IPSJ SIG ASD Technical Reports, (2022), Kitakyushu,

## [2021]

[15] ( Reviewed ) Haru Kaneko, Tahera Hossain, Sozo Inoue : "Estimation of Record Contents for Automatic Generation of Care Records", Human Activity Recognition Challenge, Springer Nature, Vol. 204, pp 289-306, (2021), doi.org/10.1007/978-981-15-8944-7\_18. Kitakyushu Japan,

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[17] ( Reviewed ) Haru Kaneko, Tahera Hossain, Sozo Inoue : "Analysis of Feature Importances for Automatic Generation of Care Records", UbiComp '21: Adjunct Proceedings of the 2021 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2021 ACM International Symposium on Wearable Computers (HASCA), No. 5, pp 316–321, (2021), doi.org/10.1145/3460418.3479354. Virtual, USA Online,

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# Haru Kaneko

Ph.D. student at Kyushu Institute of Technology

## [2020]

[19] Haru Kaneko : "Estimate the Recorded Detail of Care Records by Machine Learning", Bachelor Thesis, pp 1-31, (2020), Iizuka,

[20] Haru Kaneko, Sozo Inoue : "Toward Estimate Record Contents for Automatic Generation of Care Records (In Japanese)", IPSJ SIG UBI Technical Reports, Vol. 2020, No. 41, pp 1-6, (2020), Nagoya, Japan Online, [Link].

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[22] ( Reviewed ) Haru Kaneko, Tahera Hossain, Sozo Inoue: "Implementation of Care Records Automatic Generation Function in a Care Record Application", The 40th Joint Conference on Asia-Pacific Association of Medical Informatics (APAMI), pp 1-6, (2020), Online, [Link].

## [2019]

[23] Haru Kaneko, Sozo Inoue: "Toward Automatically Generate of Care Records in Care Facilities (In Japanese)", Proceedings of Japan Society for Fuzzy Theory and Intelligent Informatics, pp 2-5, (2019), Iizuka, [Link].

## **REFERENCES**

My supervisor is Prof Sozo Inoue, sozo@sozolab.jp.