

NAOKI CHIHARA

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SUMMARY

I am Naoki Chihara, a second-year M.Sc. student at Osaka University, Japan, and a project researcher at SANKEN (The Institute of Scientific and Industrial Research at Osaka University). My research mainly focuses on stream processing and causal discovery in time series. I am fortunate to be advised by Prof. Yasushi Sakurai and Prof. Yasuko Matsubara at SANKEN. I recieved my B.Sc. degree from Osaka University advised by Prof. Makoto Onizuka in March, 2023.

EDUCATION

M.Sc. in Information Science, Osaka University

Apr. 2023 – present

Department of Information Systems Engineering, Graduate School of Information Science and Technology

Osaka, Japan

- Research area: Time series analysis, Data stream mining, Causality
- Supervisor: Prof. Yasushi Sakurai

B.Sc. in Engineering, Osaka University

Apr. 2019 – Mar. 2023

Department of Electronic and Information Engineering, School of Engineering

Osaka, Japan

- Research area: Time series analysis, Feature extraction, Sparse modeling
- Supervisor: Prof. Makoto Onizuka

EXPERIENCE

SANKEN, Osaka University

June 2023 – present

Project Researcher

Osaka, Japan

School of Engineering, Osaka University

Apr. 2023 – Sept. 2023

Teaching Assistant

Osaka, Japan

Graduate School of Information Science and Technology, Osaka University

June 2021 – Mar. 2023

Assistant for detection of variable celestial objects

Osaka, Japan

Nagase Co., Ltd.

Sept. 2020 – Mar. 2023

Digital Technology Engineer

Tokyo, Japan

PUBLICATIONS

International Conference Proceedings

- [1] [Naoki Chihara](#), Yasuko Matsubara, Ren Fujiwara, and Yasushi Sakurai. **Modeling Time-evolving Causality over Data Streams.** *The 31st ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD2025)*, Tronto, Canada, August 3-7, 2025 (acceptance rate: 19%).
- [2] [Naoki Chihara](#), Yasuko Matsubara, Ren Fujiwara, and Yasushi Sakurai. **Stream Mining Time-evolving Causality in Time Series.** *The 30th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD2024) PhD Consortium*, Barcelona, Spain, August 25-29, 2024.

International Journal Articles

- [3] [Naoki Chihara](#), Tadafumi Takata, Yasuhiro Fujiwara, Koki Noda, Keisuke Toyoda, Kaito Higuchi, and Makoto Onizuka. **Effective detection of variable celestial objects using machine learning-based periodic analysis.** *Astronomy and Computing*, Vol. 45, pp. 100765, November 3, 2023.

Domestic Journals / Presentations

- [4] [Naoki Chihara](#), Yasuko Matsubara, Ren Fujiwara, and Yasushi Sakurai. **Real-time Forecasting of Time-evolving Data Streams using Dynamic Mode Decomposition.** *IPSJ Transactions on Databases (TOD)*, Vol. 17, No. 2, pp. 1-11, April 23, 2024.
- [5] [Naoki Chihara](#), Yasuko Matsubara, Ren Fujiwara, and Yasushi Sakurai. **動的模式分解を活用した高速将来予測アルゴリズム.** *The 16th Forum on Data Engineering and Information Management (DEIM2024)*, Hyogo, Japan, February 29, 2024. **DEIM2024 Best Paper Award Runner-up, 2024 IPSJ Yamashita SIG Research Award.**
- [6] Aiyi Li, Kenya Hoshimure, Kei Tanigaki, Yota Hatano, Reina Nozawa, Yuki Sakamoto, Yuanzhou Wei, [Naoki Chihara](#), and Naoki Kodani. **Semi-autonomous Leader-follower Approach for Swarm Drone Guidance.** *The 36th SICE Symposium on Decentralized Autonomous Systems*, Tokyo, Japan, February 16, 2024.
- [7] [Naoki Chihara](#), Tadafumi Takata, Yasuhiro Fujiwara, and Makoto Onizuka. **周期解析による変動天体の検出.** *The 15th Forum on Data Engineering and Information Management (DEIM2023)*, Gifu, Japan, March 6, 2023.

Patents

- [8] Yasuhiro Fujiwara, Makoto Onizuka, and [Naoki Chihara](#). 検出装置、検出方法及びプログラム. 特願 2023-099796, 2023 年 6 月 19 日出願.

GRANTS & AWARDS

2024 IPSJ Yamashita SIG Research Award

July 2024

DEIM2024 Best Paper Award Runner-up

June 2024

Osaka University Humanware Innovation Program Scholarship

Apr. 2023 - present

LEADERSHIP / EXTRACURRICULAR

Conference Volunteer Work

May 2023

- The 27th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD2023)

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