

Kagurazaka Ritsuka (晏雲杉)

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Research interests	discrete-event systems (supervisory control) cybersecurity (detectability, opacity and detectability of DES) computer assisted and verified proofs (Isabelle/HOL)
Programming Languages and Tools	C, C++ Java, Scala, Python, Lua JavaScript/TypeScript, PHP Prolog, Txl, REST APIs Git, Linux, Docker, SQL
Teaching experience	Data Structures; Computer Architecture; Microprocessor Interfacing and Embedded Systems; Discrete Mathematics; Semantics of Programming Language; Electric Circuits.
Teaching awards	2021 Dean's Teaching Assistant Award (DTA) as exceptional Teaching Assistant nominated by the department. Teaching Assistant of the Year for Excellence in Education and Exceptional Teaching as voted by students of the department, for the academic year of 2016/2017.
Position	Post-doctoral Research Fellow Department of Electrical Engineering and Computer Science University of Michigan Principal Investigator: Prof. Stéphane Lafortune Feb. 2024–Jan. 2025
Education	Doctor of Philosophy Department of Electrical and Computer Engineering Queen's University, Canada Supervisor: Prof. Karen Rudie Awarded: 2023 Nov. Master of Engineering Department of Electrical and Computer Engineering Queen's University, Canada Awarded: 2019 June GPA: 4.04/4.3 Bachelor of Applied Science Department of Electrical and Computer Engineering Queen's University, Canada Awarded: 2018 June with First Class Honours core GPA: 3.97/4.3
Publications	See also https://ritsuka.moe/bibpage.html .

Thesis

K. Ritsuka

Decentralized Problems of Discrete-Event Systems: Epistemic Reasoning and Graph Representation

Ph.D. thesis

Peer-Reviewed Publications

K. Ritsuka, K. Rudie

“A Uniform Approach to Compare Architectures in Decentralized Discrete-Event Systems”,

Automatica, Volume 165, Article 111683 (2024)

[DOI:10.1016/j.automatica.2024.111683](https://doi.org/10.1016/j.automatica.2024.111683)

K. Ritsuka, K. Rudie

“Do What You Know: Coupling Knowledge with Action in Discrete-Event Systems”,

Discrete Event Dynamic Systems, Volume 33, Pages 257-277 (2023)

[DOI:10.1007/s10626-023-00381-z](https://doi.org/10.1007/s10626-023-00381-z)

K. Ritsuka, K. Rudie

“Epistemic Interpretations of Decentralized Discrete-Event System Problems”,

Discrete Event Dynamic Systems, Volume 32, Pages 359-398 (2022)

[DOI:10.1007/s10626-022-00363-7](https://doi.org/10.1007/s10626-022-00363-7)

K. Ritsuka, K. Rudie

“A Visualization of Inference-Based Supervisory Control in Discrete-Event Systems”,

Proceedings of the 60th IEEE Conference on Decision and Control (CDC), Pages 1062-1068 (2021)

[DOI:10.1109/CDC45484.2021.9683210](https://doi.org/10.1109/CDC45484.2021.9683210)

J. Kulchyk, B. Schonewille, **K. Ritsuka**, K. Rudie

“Communication-Free Multi-Agent Coordination in an Unknown Environment”,

Proceedings of the 15th IFAC International Workshop on Discrete Event Systems (WODES), Volume 53, Issue 4, Pages 159-165 (2020)

[DOI:10.1016/j.ifacol.2021.04.062](https://doi.org/10.1016/j.ifacol.2021.04.062)

Technical Reports

K. Ritsuka, K. Rudie

“Equivalence of Decentralized Observation, Diagnosis, and Control Problems in Discrete-event Systems”, 2023

Preprint available as [arXiv:2204.10792](https://arxiv.org/abs/2204.10792).

N. Mertin, **K. Ritsuka**, K. Rudie

“A Framework for the High-Level Specification and Verification of Synchronous Digital Logic Systems”, 2022

Preprint available as [arXiv:2201.10632](https://arxiv.org/abs/2201.10632).

Teaching

Graduate Teaching Assistant

- CISC 465/865-2023W: Semantics of Programming Languages (ongoing)
- ELEC 274-2023W: Computer Architecture (ongoing)
- ELEC 371-2022F: Microprocessor Interfacing and Embedded Systems
- * ELEC 270-2022W: Discrete Mathematics
- ** ELEC 270-2021W: Discrete Mathematics
- ELEC 371-2020F: Microprocessor Interfacing and Embedded Systems
- ELEC 270-2020W: Discrete Mathematics
- ELEC 278-2019F: Data Structures
- ELEC 278-2018F: Data Structures

- * Head TA
- ** Recipient of the 2021 Dean's Teaching Assistant Award (DTA)\
as exceptional Teaching Assistant nominated by the department. With a
monetary award.

Undergraduate Teaching Assistant

- ELEC 274-2018W: Computer Architecture
- ELEC 278-2017F: Data Structures
- * ELEC 274-2017W: Computer Architecture
- ELEC 221-2016F: Electric Circuits

- * Awarded as Teaching Assistant of the Year for Excellence in Education and
Exceptional Teaching
as voted by students of the department, for the academic year of 2016/2017.

Awards

- Dean's Teaching Assistant Award, 2021
- Students' Choice: The Best Engineering Capstone Project, 2018
- Teaching Assistant of the Year, 2017
- Ho Ming Tai Memorial Scholarship, 2015, 2016, 2017, 2018
- Dean's Scholar, 2015, 2016, 2017, 2018
- Queen's University Excellence Scholarship, 2014