

## Kagurazaka Ritsuka (晏雲杉)

Email : [cv@Ritsuka.moe](mailto:cv@Ritsuka.moe), [Ritsuka@umich.edu](mailto:Ritsuka@umich.edu), [Ritsuka314@queensu.ca](mailto:Ritsuka314@queensu.ca)  
Personal Page : <https://ritsuka.moe/>  
LinkedIn : <https://www.linkedin.com/in/kagurazaka-ritsuka-58a2a617a/>

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<b>Research interests</b>	discrete-event systems (supervisory control, decentralization) computer assisted and verified proofs (Isabelle/HOL)
<b>Teaching experience</b>	Data Structures; Computer Architecture; Microprocessor Interfacing and Embedded Systems; Discrete Mathematics; Semantics of Programming Language; Electric Circuits.
<b>Teaching awards</b>	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.
<b>Position</b>	Post-doctoral Research Fellow Department of Electrical Engineering and Computer Science, University of Michigan Principal Investigator: Prof. Stéphane Lafortune Feb. 2024–Jan. 2025
<b>Education</b>	<b>Queen's University, Canada</b> <i>Doctor of Philosophy, Department of Electrical and Computer Engineering</i> <i>Supervisor: Prof. Karen Rudie</i> <i>Awarded:</i> 2023 November  <b>Queen's University, Canada</b> <i>Master of Engineering, Department of Electrical and Computer Engineering</i> <i>Awarded:</i> 2019 June <i>GPA:</i> 4.02/4.3  <b>Queen's University, Canada</b> <i>Bachelor of Applied Science, Department of Electrical and Computer Engineering</i> <i>Awarded:</i> 2018 June <i>Honours:</i> First Class Honours <i>GPA:</i> CGPA: 3.85/4.3
<b>Publications</b>	See also <a href="https://ritsuka.moe/bibpage.html">https://ritsuka.moe/bibpage.html</a> .

## 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*, in print (2024). DOI: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*, pp. 257-277 (2023). DOI:10.1007/s10626-023-00381-z.

**K. Ritsuka**, K. Rudie

“Epistemic Interpretations of Decentralized Discrete-Event System Problems”,  
*Discrete Event Dynamic Systems*, pp. 359-398 (2022). DOI: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)*, pp. 1062-1068 (2021). DOI: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)*  
pp. 159-165 (2020). DOI: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