Kagurazaka Ritsuka (晏雲杉)
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Research interests

discrete-event systems (supervisory control, decentralization)
cybersecurity (opacity and detectabily 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
Honours: 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, 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.

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.

Teaching

Graduate Teaching Assistant

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CISC 465/865-2023W: Semantics of Programming Languages (ongoing)
ELEC 274-2023W: Computer Architecture (ongoing)
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   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.
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Undergraduate Teaching Assistant

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   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.
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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