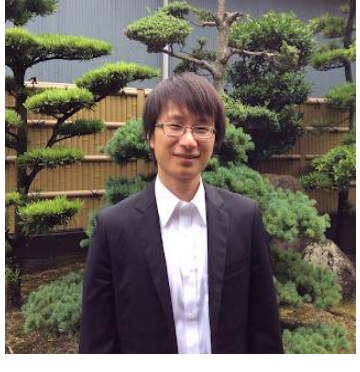


Requests for Collaboration

<p>Name: Kai Cai Current position: Associate Professor E-mail address: kai.cai@eng.osaka-cu.ac.jp</p>	
<p>Research Interests</p> <ul style="list-style-type: none">● Networked robotic systems● Supervisory/distributed control of discrete-event systems● Cooperative control of multi-agent systems	
<p>Creative Achievements in The Application of New and Existing Science and Technology</p>	
<p>(1) Proposed an original top-down approach, called supervisor localization, which systematically decomposes centralized or hierarchical supervisors into local controllers for individual agents, with no loss in control performance.</p> <p>(2) Discovered a new observability concept for discrete-event systems, which solved a 25-year unsolved problem in this field of controller synthesis under partial observation.</p> <p>(3) Propose a new class of distributed algorithms (exploiting auxiliary variables) that achieve average consensus over arbitrary strongly connected networks. These new algorithms are robust against a number of network constraints including time-varying switchings, random packet dropouts, asynchronous communications, and quantization.</p>	
<p>Technology (Product, Process, Device, Service etc.) That I Want to Request for Collaboration</p>	
<ul style="list-style-type: none">● Deep learning● Logistic automation using robotic networks● Brain networks	
<p>A List of 5 Key Publications</p>	
<ul style="list-style-type: none">• W.M. Wonham and <u>K. Cai</u>, "Supervisory Control of Discrete-Event Systems", Communications and Control Engineering, Springer, 2019. Online: www.springer.com/la/book/9783319774510• W.M. Wonham, <u>K. Cai</u>, and K. Rudie, "Supervisory control of discrete-event systems: a brief history", Annual Reviews in Control, vol. 45, pp. 250-256, 2018.• <u>K. Cai</u>, R. Zhang, and W.M. Wonham, "Correction to 'Relative observability of discrete-event systems and its supremal sublanguages'", IEEE Transactions on Automatic Control, vol. 62, no. 1, p. 511, 2017.• <u>K. Cai</u> and W.M. Wonham, "Supervisor Localization: A Top-Down Approach to Distributed Control of Discrete-Event Systems", Lecture Notes in Control and Information Sciences, vol. 459, Springer, 2016.• <u>K. Cai</u>, R. Zhang, and W.M. Wonham, "Relative observability of discrete-event systems and its supremal sublanguages", IEEE Transactions on Automatic Control, vol. 60, no. 3, pp. 659-670, 2015.	