

# Genya Ishigaki

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## Education

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- May 2020** **Ph.D. in Computer Science** from The University of Texas at Dallas  
(Expected) **Courses:** Advanced Operating Systems · Design and Analysis of Computer Algorithms · Game Theory · Optical Networks · Performance of Computer Systems and Networks · Algorithmic Aspects of Telecom. Networks · Combinatorics and Graph Algorithms · Advanced Optical Networks · Theory of Computation
- March 2016** **M.S. in Engineering** from Soka University, Japan [GPA: 4.0]  
Department of Information Systems Science  
**Thesis:** "On composing a resilient tree in a communication network with intermittent connections based on stress centrality"
- March 2014** **B.S. in Engineering** with honors from Soka University, Japan [GPA: 3.95]  
Department of Information Systems Science  
**Thesis:** "Distributed network flow optimization algorithm based on tie-set control with coloring"

## Teaching Experience

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- May 2018 - present** **Course Instructor Teaching Assistant** at The University of Texas at Dallas  
CS3305 Discrete Mathematics for Computing II
- August - December 2017** **Teaching Assistant** at The University of Texas at Dallas  
CS4390 Computer Networks (Dr. Zygmunt J. Haas)
- April 2014 - March 2016** **Teaching Assistant** at Soka University, Tokyo Japan  
INFO161 Introduction to Programming with C I & II  
INFO251 Linear Programming  
INFO372 Graph Theory and Algorithms

## Research Experience

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- April - August 2016** **Graduate Researcher** at Soka University, Tokyo Japan

## Research Interests

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Survivability and recovery problems in layered networks, Deep reinforcement learning, Interdependent networks, Graph optimization algorithms, Network Function Virtualization, Software Defined Networking

## Selected Publications

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### Journals

1. Ashkan Yousefpour, Ashish Patil, **Genya Ishigaki**, Inwoong Kim, Xi Wang, Hakki C. Cankaya, Qiong Zhang, Weisheng Xie, Jason P. Jue, "*FogPlan: A Lightweight QoS-aware Dynamic Fog Service Provisioning Framework*," IEEE Internet of Things Journal, 2019 (Early Access DOI: 10.1109/JIOT.2019.2896311) [Accepted]
2. **Genya Ishigaki**, Riti Gour, Jason P. Jue, "*Improving the Survivability of Clustered Interdependent Networks by Restructuring Dependencies*," IEEE Transactions on Communications, vol. 67, no. 4, pp. 2837-2848, April 2019.
3. Riti Gour, **Genya Ishigaki**, Jian Kong, Ashkan Yousefpour, Sangjin Hong, Jason P. Jue, "*Finding Survivable Routes in Multi-domain Optical Networks with Geographically Correlated Failures*," IEEE/OSA Journal of Optical Communications and Networking, Vol. 10, Issue 8, pp. C39-C49, 2018.
4. Ashkan Yousefpour, **Genya Ishigaki**, Riti Gour, Jason P. Jue, "*On Reducing IoT Service Delay via Fog Offloading*," IEEE Internet of Things Journal, Volume: 5, Issue: 2, Apr. 2018.

### Conferences

1. **Genya Ishigaki**, Siddhartha Devic, Riti Gour, Jason P. Jue, "*DeepPR: Incremental Recovery for Interdependent VNFs with Deep Reinforcement Learning*," 2019 IEEE Global Communications Conference (GLOBECOM), Dec. 2019.
2. **Genya Ishigaki**, Riti Gour, Jason P. Jue, "*Improving the Survivability of Interdependent Networks by Restructuring Dependencies*," 2018 IEEE International Conference on Communications (ICC), May 2018.
3. **Genya Ishigaki**, Riti Gour, Ashkan Yousefpour, Norihiko Shinomiya, Jason P. Jue, "*Cluster Leader Election Problem for Distributed Controller Placement in SDN*," 2017 IEEE Global Communications Conference (GLOBECOM), Dec. 2017.
4. **Genya Ishigaki**, Norihiko Shinomiya, "*On Composing a Resilient Tree in a Network with Intermittent Links Based on Stress Centrality*," 2016 IEEE Symposium on Computers and Communication (ISCC), Jun. 2016.
5. **Genya Ishigaki**, Norihiko Shinomiya, "*Controller placement algorithm to alleviate burdens on communication nodes*," 2016 International Conference on Computing, Networking and Communications (ICNC), Feb. 2016.
6. **Genya Ishigaki**, Norihiko Shinomiya, "*Distributed Network Flow Optimization Algorithm with Tie-set Control based on Coloring for SDN*," 2015 International Conference on Computing, Networking and Communications (ICNC), Feb. 2015.
7. **Genya Ishigaki**, Masao Yoshida, Norihiko Shinomiya, "*On maximizing tree reliability based on minimum diameter spanning tree*," 2014 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS), Nov. 2014.

### Conferences - Coauthorship

1. Hideo Kobayashi, **Genya Ishigaki**, Riti Gour, Jason P. Jue, Norihiko Shinomiya, "*Embedding Chains of Virtual Network Functions in Inter-Datacenter Networks*" 2018 International Conference on Computing, Networking and Communications (ICNC), Mar. 2018.
2. Riti Gour, Jian Kong, **Genya Ishigaki**, Ashkan Yousefpour, Sangjin Hong, Jason P. Jue, "*Survivable Routing in Multi-domain Optical Networks with Geographically Correlated Failures*," 2017 IEEE Global Communications Conference (GLOBECOM), Dec. 2017.
3. Ashkan Yousefpour, **Genya Ishigaki**, Jason P. Jue, "*Fog Computing: Towards Minimizing Delay in the Internet of Things*," 2017 IEEE EDGE, Jun. 2017.
4. Hideki Shindo, Hideo Kobayashi, **Genya Ishigaki**, Norihiko Shinomiya, "*Multi-Leader Election in a Clustered Graph for Distributed Network Control*," 31st IEEE International Conference on Advanced Information Networking and Applications (AINA 2017), Mar. 2017.

## Honors and Awards

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- 2018 - 2019**    **Best Teaching Assistant Award** from The University of Texas at Dallas  
As an instructor of CS 3305 Discrete Math II
- 2016 - 2019**    **Merit-based Full Scholarship for Ph.D. Study**  
Sponsored by Japanese government
- 2014 - 2016**    **Merit-based Full Scholarship for Master Study**  
Sponsored by Japanese government
- 2015**            **NEC C&C Foundation Travel Grant**
- 2014**            **Student Research Award** from Committee on Circuits and Systems of IEICE ES Society
- Class of 2014**   **Top Graduate of Dept. of Information Systems Science** from Soka University, Tokyo Japan
- 2010 - 2014**    **Merit-based Tuition Scholarship** from Soka University, Tokyo Japan
- 2010 - 2013**    **Honor Student** from Soka University, Tokyo Japan

## Professional Services

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- April 2015 - present**   IEEE Tokyo Young Professionals (YPs) committee
- 2017 - present**    Peer reviewer for Optical Switching and Networking (Elsevier), IEEE Globecom 2017 - 2019, IEEE ICC 2018 - 2019, RNDM 2018, IEEE GCCE 2017 - 2019
- 2018 - present**    IEEE GCCE 2018 & 2019 Technical Program Committee

## References

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### **Jason P. Jue Ph.D.**

Professor in Department of Computer Science at The University of Texas at Dallas

### **Norihiko Shinomiya Ph.D.**

Professor in Faculty of Science and Engineering, Soka University