

Hiroki Sayama, D.Sc.

佐山弘樹

SUNY Distinguished Professor, School of Systems Science and Industrial Engineering
Executive Assistant Dean for Graduate Studies, Thomas J. Watson College of Engineering and Applied Science
Director, Binghamton Center of Complex Systems
Director, Graduate Program in Systems Science
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Binghamton University, State University of New York
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Professor (non-tenure-track), Faculty of Commerce, Waseda University, Japan
External Faculty, Vermont Complex Systems Institute, University of Vermont, USA
Visiting Professor, School of Sciences, Christ University Pune/Lavasa Campus, India

Holds U.S. Citizenship

Education

B.Sc. Information Science, University of Tokyo, Japan (March 1994)

M.Sc. Information Science, University of Tokyo, Japan (March 1996)

D.Sc. Information Science, University of Tokyo, Japan (March 1999)

Dissertation title: “Constructing evolutionary systems on a simple deterministic cellular automata space”

Dissertation supervisor: Prof. Yoshio Oyanagi

Professional Positions

1999-2002 Postdoctoral Fellow
New England Complex Systems Institute, Cambridge, MA, USA

2000-2001 Associate in Research
Edwin O. Reischauer Institute of Japanese Studies
Harvard University, Cambridge, MA, USA

2002-2004 Assistant Professor
Department of Human Communication
University of Electro-Communications, Tokyo, Japan

2002-present Affiliate
New England Complex Systems Institute, Cambridge, MA, USA

2003-2005 Adjunct Assistant Professor
Department of Complex Systems Science, Graduate School of Information Science
Nagoya University, Nagoya, Japan

2004-2005	Associate Professor Department of Human Communication University of Electro-Communications, Tokyo, Japan
2006-2011	Assistant Professor Department of Bioengineering Department of Systems Science and Industrial Engineering (joint title 2010-2011) Binghamton University, State University of New York, USA
2012-2017	Associate Professor Department of Bioengineering (2012-2014) Department of Systems Science and Industrial Engineering (joint title 2012-2014) Binghamton University, State University of New York, USA
2014-2018	Visiting Research Professor Center for Complex Network Research (CCNR) / Department of Physics Northeastern University, Boston, USA
2017-2018	Associate Professor (non-tenure-track) Faculty of Commerce Waseda University, Tokyo, Japan
2017-2024	Professor Department of Systems Science and Industrial Engineering Binghamton University, State University of New York, USA
2018	Adjunct Professor Department of General Systems Studies, Graduate School of Arts and Sciences University of Tokyo, Tokyo, Japan
2018-present	Professor (non-tenure-track) Faculty of Commerce Waseda University, Tokyo, Japan
2021-present	External Faculty Vermont Complex Systems Institute University of Vermont, USA
2024-present	Visiting Professor School of Sciences Christ University Pune/Lavasa Campus, India
2024-present	SUNY Distinguished Professor Department/School of Systems Science and Industrial Engineering Binghamton University, State University of New York, USA
2024-present	Executive Assistant Dean for Graduate Studies Thomas J. Watson College of Engineering and Applied Science Binghamton University, State University of New York, USA

Research Interests: “Complex Systems”

Complex Dynamical Networks

State-topology coevolution in adaptive networks, social network evolution, network analysis, modeling and simulation, graph product multilayer networks, network science and education

Human and Social Dynamics

Collective human decision making, team and organizational dynamics, opinion dynamics, evolutionary game theory, agent-based modeling and simulation

Artificial Life/Chemistry

Collective behavior of swarms, morphogenetic engineering, self-replication, self-repair, cellular automata, pattern formation, computational models of ecological and evolutionary dynamics, open-ended evolution, nature-inspired computing

Interactive Systems

Interactive evolutionary computation, interactive educational tools, interactive media art

List of Publications and Other Achievements

Continuously updated and available online at <https://bingdev.binghamton.edu/sayama/pub.html>

Research and Educational Grants

1997-1999	First-Class Scholarship Japan Scholarship Foundation Amount: JPY 2,688,000
1999-2001	Overseas Scholarship Murata Overseas Scholarship Foundation, Japan Subject: Study on parallel computation models that utilize logical structures immanent in the complexity of cellular automata Amount: JPY 3,350,000
2002	Travel Award for Researchers Dispatched to International Conventions Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan Subject: Von Neumann's machine in the shell: Enhancing the robustness of self-replication processes (Presentation at the Eighth International Conference on Artificial Life, Sydney, Australia) Amount: JPY 184,280
2002-2003	UEC Grant for the Promotion of Research and Education University of Electro-Communications, Japan Subject: Emergence and evolution of patterns in spatially distributed locally interacting populations Amount: JPY 1,300,000 Role: PI
2003	Visiting Researcher Support (as a host institution for short-term visit of Chris Salzberg) International Information Science Foundation, Japan

- Subject: Visualization and analysis of graph-based evolutionary dynamics
Amount: JPY 300,000
- 2003-2004 Grant for Research on Human and Entertainment
Hayao Nakayama Foundation for Science, Technology and Culture, Japan
Subject: Basic study on the possibility of physical implementation of self-replicating toys
Amount: JPY 1,000,000
Role: PI
- 2003-2004 Grant for Environmental Research
Showa Shell Sekiyu Foundation for Promotion of Environmental Research, Japan
Subject: Theoretical models and simulations of the effects of artificial modification of habitat structure on biodiversity
Amount: JPY 500,000
Role: PI
- 2005-2007 Grants-in-Aid for Scientific Research (KAKENHI)
Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan
Subject: Developing a kinematic model of self-replicating universal constructors
Amount: JPY 1,200,000
(Project canceled due to moving of PI)
Role: PI
- 2006-2007 Interdisciplinary Collaboration Grant
Division of Research, Binghamton University
Subject: Modeling judgment and decision making of collaborative teams working to satisfy variable requirements
Amount: \$8,000
Role: Co-PI (Collaboration with Shelley Dionne)
- 2006-2007 Mini-Grant for Short-Term Travel Support
Division of Research, Binghamton University
Amount: \$700
- 2007 Mini-Grant for Short-Term Travel Support
Division of Research, Binghamton University
Amount: \$1,000
- 2007 Individual Development Award
Binghamton University / UUP
Amount: \$1,000
- 2008 Individual Development Award
Binghamton University / UUP
Amount: \$1,000
- 2008-2010 Course, Curriculum, and Laboratory Improvement
National Science Foundation (Award #: NSF DUE-0737313)
Subject: Teaching Social Complexity and Multidisciplinary Team Building: An Experimental Engineering Approach
Amount: \$149,955
Role: Co-PI (Collaboration with Craig Laramée, Shelley Dionne and David Sloan Wilson)

- 2008-2010 Conrad and Virginia Klee Foundation
Subject: Linking Youth and Community through Technology
Amount: \$71,500
Role: Co-PI (Collaboration with Pamela Mischen, Madhu Govindaraju and Kevin Heard)
- 2008-2012 Human and Social Dynamics
National Science Foundation (Award #: NSF SES-0826711)
Subject: Evolutionary Perspective on Collective Decision Making
Amount: \$552,074
Role: Main PI (Collaboration with Shelley Dionne, Craig Laramee, J. David Schaffer and Francis Yammarino)
- 2009 Mini-Grant for Short-Term Travel Support
Division of Research, Binghamton University
Amount: \$340
- 2009 Individual Development Award
Binghamton University / UUP
Amount: \$1,000
- 2010 Individual Development Award
Binghamton University / UUP
Amount: \$700
- 2010 Individual Development Award
Binghamton University / UUP
Amount: \$668
- 2010-2011 Interdisciplinary Collaboration Grant
Division of Research, Binghamton University
Subject: Modeling diffusion and adoption of innovation over space and time using automated model discovery techniques
Amount: \$10,000
Role: Main PI (Collaboration with Manoj Agarwal, Kenneth Chiu and Kevin Heard)
- 2010-2011 Interdisciplinary Collaboration Grant
Division of Research, Binghamton University
Subject: A system for individual-based modeling using graphics processing unit acceleration
Amount: \$10,000
Role: Co-PI (Collaboration with Kenneth Chiu and David Liu)
- 2010-2014 Cyber-enabled Discovery and Innovation Type-I
National Science Foundation (Award #: NSF BCS-1027752)
Subject: Modeling and Predicting State-Topology Coevolution of Complex Adaptive Networks
Amount: \$412,189
Role: PI (International collaboration with Thilo Gross)
- 2011 EvoS Small Grant
EvoS Program, Binghamton University
Subject: Emergence and Evolution of “Super-Organisms” in an Artificial Swarm via

	Transmission and Mutation of Behavioral Properties Amount: \$720 Role: PI
2011-2012	Academic Programs and Faculty Development Fund Office of the Provost, Binghamton University Subject: New Interdisciplinary Graduate Concentration/Certificate Programs in Complex Systems Science and Engineering Amount: \$10,000 Role: Main PI (Collaboration with six other Binghamton faculty members)
2011-2012	Academic Programs and Faculty Development Fund Office of the Provost, Binghamton University Subject: Automated Model Discovery: A New Mode of Scientific Inquiry for the Coming Century Amount: \$10,000 Role: Co-PI (Collaboration with Kenneth Chiu and five other Binghamton faculty members)
2011-2012	Academic Programs and Faculty Development Fund Office of the Provost, Binghamton University Subject: Virtual Communities for Neighborhood Modeling and Computational Thinking Amount: \$17,700 Role: Co-PI (Collaboration with Pam Mischen, Madhu Govindaraju and Kevin Heard)
2011-2012	Corporate Donation BAE Systems Subject: NetSci High 2012: The Second International High School Student Poster Competition on Network Science Amount: \$2,325 Role: PI
2011	Mini-Grant for Short-Term Travel Support Division of Research, Binghamton University Amount: \$500
2012	Research & Development Contract Defence Research & Development Canada -- Centre for Operational Research and Analysis Subject: Generative Network Automata-Based Modeling and Analysis of Dynamical Operational Networks with Embedded Heterogeneous Agents Amount: \$25,000 Role: PI
2012-2015	Innovative Technology Experiences for Students and Teachers (ITEST) National Science Foundation (Award #: NSF DRL- 1139478) Subject: Network Science for the Next Generation Amount: \$24,000 Role: Individual consultant to the New York Hall of Science (Collaboration with Stephen Uzzo, H. Eugene Stanley and Paul Trunfio)
2012	Mini-Grant for Short-Term Travel Support Division of Research, Binghamton University Amount: \$1,000

- 2013-2017 Robust Intelligence
National Science Foundation (Award #: NSF IIS-1319152)
Subject: Robustness and Adaptation in Morphogenetic Collective Systems
Amount: \$374,811 (+ \$1,756 as supplemental funding)
Role: PI
- 2014-2015 Research Grant
Telecommunications Advancement Foundation, Japan
Subject: Studying online users' cooperative mechanisms using evolutionary games
Amount: JPY 1,110,000
Role: Co-PI (Collaboration with Genki Ichinose)
- 2014-2015 Interdisciplinary Collaboration Grant
Division of Research, Binghamton University
Subject: A machine learning-based approach for optimizing the discovery of brain-based risk markers for psychiatric illness
Amount: \$20,000
Role: Co-PI (Collaboration with Vladimir Miskovic, Brandon Gibb and Chun-An Chou)
- 2014-2015 Authorship Grant
Open SUNY Textbooks, Milne Library, SUNY College at Geneseo
Subject: Introduction to the Modeling and Analysis of Complex Systems
Amount: \$3,000
Role: PI (single author of the textbook)
- 2014-2015 Individual Development Award
Binghamton University / UUP
Amount: \$1,000
- 2015 Conference Support Grant
US Army Research Office
Subject: CompleNet 2015: The Sixth International Workshop on Complex Networks
Amount: \$14,962
Role: PI
- 2015-2016 Interdisciplinary Collaboration Grant
Division of Research, Binghamton University
Subject: Using Network Analysis to Explore the Temporal Dynamics of Emotion in Schizophrenia
Amount: \$10,000
Role: Co-PI (Collaboration with Gregory Strauss)
- 2015-2016 Health Sciences Transdisciplinary Area of Excellence (TAE) Grant
Division of Research, Binghamton University
Subject: Predicting Conversion to Psychosis in At-Risk Youth: The Role of Stress-Inflammation Interactions
Amount: \$20,000
Role: Co-PI (Collaboration with Gregory Strauss, Terrence Deak and Gary James)
- 2015-2020 Organized Research Center Support
Division of Research, Binghamton University

	Subject: Establishment of the Center for Collective Dynamics of Complex Systems Amount: \$60,000 Role: Main PI (Collaboration with a number of CoCo faculty members)
2016	Individual Development Award Binghamton University / UUP Amount: \$910.60
2016-2017	Conference Support Grant US Army Research Office Subject: Workshop Support: Network Science and Education Amount: \$20,000 Role: Main PI (Collaboration with Ralucca Gera and Lori Sheetz)
2016-2018	Grants-in-Aid for Scientific Research (KAKENHI) Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan Subject: The Impact of Technological Relatedness on Firm Performance after Acquisitions Amount: JPY 3,250,000 Role: Co-PI (Collaboration with Junichi Yamanoi)
2017	Individual Development Award Binghamton University / UUP Amount: \$1,000
2017-2021	Research Grant US Army Research Institute for the Behavioral and Social Sciences Subject: Collective Planning and Leadership for the U.S. Army Amount: \$639,219 (Binghamton portion: \$395,322) Role: Co-PI (Collaboration with Francis Yammarino, Michael Mumford, Shelley Dionne and Shane Connelly)
2017-2020	Research Grant National Institute of Mental Health, National Institutes of Health Subject: Modeling Anhedonia in Schizophrenia: A Stochastic Dynamical Systems Approach Amount: \$417,456 (Binghamton portion: \$132,995) Role: Co-PI (Collaboration with Gregory Strauss and Brett Clementz)
2017-2021	Science of Organizations National Science Foundation (Award #: NSF SES-1734147) Subject: Diversity, Network Structure, and the Effectiveness of Collective Design and Innovation Amount: \$441,000 Role: Main PI (Collaboration with Shelley Dionne and Francis Yammarino)
2017-2018	Conference Grant SUNY Conversations in the Disciplines program Subject: First Northeast Regional Conference on Complex Systems Amount: \$3,000 Role: Main PI (Collaboration with CoCo ORC faculty)
2017-2018	Data Science Transdisciplinary Area of Excellence (TAE) Working Group Seed Grant Division of Research, Binghamton University

- Subject: Adaptive Network Modeling of Real-World Temporal Social Networks
Amount: \$3,000
Role: Main PI (Collaboration with Qi Wang, Xingye Qiao and Zhongfei (Mark) Zhang)
- 2018 Conference Grant
National Science Foundation
Subject: NERCCS 2018: First Northeast Regional Conference on Complex Systems
Amount: \$4,836
Role: Main PI (Collaboration with Changqing Cheng and Shelley Dionne)
- 2018-2019 Research Grant
Waseda University Research Promotion Division
Subject: Can Diversity Help Us Connected? Adaptive Network Model of Rapid Social Evolution Under Intensified Interactions Among Constituents
Amount: JPY 500,000
Role: Main PI (Collaboration with Junichi Yamanoi)
- 2019 Individual Development Award
Binghamton University / UUP
Amount: \$900
- 2019-2021 Research Grant
National Institute of Mental Health, National Institutes of Health
Subject: Mechanisms Underlying Emotion Regulation Abnormalities in Youth at Clinical High-Risk for Psychosis
Amount: \$3,000
Role: Individual consultant to the University of Georgia (Collaboration with Gregory Strauss)
- 2019-2023 Grants-in-Aid for Scientific Research (KAKENHI)
Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan
Subject: How Does Diversity of Individuals Affect the Structure of Society?: A Constructive Approach Using Adaptive Networks
Amount: JPY 12,740,000
Role: Main PI (Collaboration with Junichi Yamanoi)
- 2019-2023 Grants-in-Aid for Scientific Research (KAKENHI)
Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan
Subject: Spontaneous Ideological Escalation without Leaders As a Distributed Socio-Dynamical Process
Amount: JPY 6,370,000
Role: PI
- 2019-2022 Grants-in-Aid for Scientific Research (KAKENHI)
Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan
Subject: Integrating Crowd-Sourced Online Experiments and Agent-Based Modeling to Study Fluctuating Social Dilemma
Amount: JPY 4,420,000
Role: Co-PI (Collaboration with Genki Ichinose and Hiromu Ito)
- 2020 Individual Development Award
Binghamton University / UUP
Amount: \$783

- 2020 SUNY COVID Seed Grant Program
State University of New York
Subject: How to Resume and Maintain Economic Activities in the COVID-19 Era: An Adaptive Social Distancing Approach
Amount: \$7,500
Role: Main PI (Collaboration with Shelley Dionne and Francis Yammarino)
- 2020-2021 Research Grant
College of Community and Public Affairs & Division of Research, Binghamton University
Subject: Examining Psychological Safety in Cancer Care Systems Serving Rural and Low-Income Populations Pre- and Post- COVID-19
Amount: \$13,500
Role: Co-PI (Collaboration with Kim Brimhall, Shelley Dionne, Rory Eckardt and Joey Tsai)
- 2022-2023 Interdisciplinary Collaboration Grant
Division of Research, Binghamton University
Subject: Modeling the Emergence of Collective Action in Human Evolution
Amount: \$9,953.54
Role: Co-PI (Collaboration with Carl Lipo, Andreas Pape and Robert DiNapoli)
- 2022-2026 Grants-in-Aid for Scientific Research (KAKENHI)
Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan
Subject: Does Sharing Goals Allow People to Overcome the Social Dilemma of Vaccination?
Amount: JPY 17,160,000
Role: Co-PI (Collaboration with Genki Ichinose and Hiromu Ito)
- 2022-2023 Data Science Transdisciplinary Area of Excellence (TAE) Grant
Division of Research, Binghamton University
Subject: A Multimodal Data-Driven Approach to Improving the Effectiveness of Virtual Group Collaborations for Entrepreneurship Development
Amount: \$6,714
Role: Co-PI (Collaboration with Chou-Yu (Joey) Tsai and Cynthia Maupin)
- 2022 Open Education Resources (OER) Grant
Center for Learning and Teaching, Binghamton University
Subject: Updating the Open SUNY Textbook “Introduction to the Modeling and Analysis of Complex Systems” to 2nd Edition
Amount: \$2,000
Role: PI (single author of the textbook)
- 2023-2027 Grants-in-Aid for Scientific Research (KAKENHI)
Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan
Subject: Automatic Derivation of Dynamical Models from Temporal Network Data Using a Graph Rewriting System
Amount: JPY 18,200,000
Role: Main PI (Collaboration with Naoki Masuda)
- 2023-2024 Higher Education Research Funding Grant
Federal Emergency Management Agency (FEMA)
Subject: Binghamton Two Degrees: What Will Binghamton Look Like Under Two Degrees of Warming and What Can We Do Now to Prepare?

Amount: \$10,000
 Role: Co-PI (Collaboration with Andreas Pape and others)

2023-2024 Research Grant
 Waseda University Research Promotion Division
 Subject: Exploration for Artificial Intelligence and Artificial Life That Realize Endless
 Dynamic Processes
 Amount: JPY 300,000
 Role: Sole PI

2024 Individual Development Award
 Binghamton University / UUP
 Amount: \$2,000

2024-2025 Data Science TAE Thematic Program Grant
 Division of Research, Binghamton University
 Subject: Data Science and Artificial Intelligence for Scientific Discoveries
 Amount: \$2,500
 Role: Co-PI (lead PI: Kenneth Chiu, with several co-PIs involved)

2024-2025 Research Grant
 Waseda University Research Promotion Division
 Subject: Creative Artificial Intelligence/Artificial Life System That Realizes Endless
 Exploration Processes
 Amount: JPY 300,000
 Role: Sole PI

Keynote/Invited Talks Delivered

2008 Invited Speaker
 Institute Colloquium, Max Planck Institute for the Physics of Complex Systems
 Held in Dresden, Germany

2008 Invited Speaker
 The 2007/2008 Dean's Distinguished Lecture Series
 University of Vermont College of Engineering and Mathematical Sciences
 Held in Burlington, VT

2010 Invited Speaker
 School of Technology and Design, New York City College of Technology
 Held in New York, NY

2010 Keynote Speaker
 The 2010 Japanese Society for Evolutionary Computation Symposium
 Held in Fukuoka, Japan

2011 Invited Speaker
 Table ronde à la Cité des sciences: "Les machines peuvent-elles imiter le cerveau humain?"
 Cité des Sciences et de l'Industrie
 Held in Paris, France

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| 2011 | Keynote Speaker
The Fourth International Workshop on Guided Self-Organization (GSO 4)
Held in Hatfield, UK |
| 2011 | Invited Speaker
Chief of Naval Operations (CNO) Strategic Studies Group
Held in Newport, RI |
| 2012 | Invited Speaker
Raytheon BBN Technologies
Held in Cambridge, MA |
| 2012 | Invited Speaker
Xerox Research Center
Held in Webster, NY |
| 2014 | Invited Speaker
Complex Systems Group Seminar, Universidad Politecnica de Madrid
Held in Madrid, Spain |
| 2015 | Invited Speaker
Collective Behavior Study Group, Cornell University
Held in Ithaca, NY |
| 2016 | Keynote Speaker
Thirteenth NetEco Symposium
Held in Kisarazu, Japan |
| 2016 | Invited Speaker
Ocean Engineering Seminar, Texas A&M University
Held in College Station, TX |
| 2017 | Invited Speaker
Worcester Polytechnic Institute
Held in Worcester, MA |
| 2018 | Invited Speaker
Complexity Week, National Autonomous University of Mexico
Held in Mexico City, Mexico |
| 2018 | Invited Speaker
Computer Science Student Research Day, University of Vermont
Held in Burlington, VT |
| 2018 | Invited Speaker
Applied Mathematics Seminar, University at Buffalo
Held in Buffalo, NY |
| 2018 | Invited Speaker
APCTP International Workshop on Theoretical Perspectives in Network Science
Held in Seoul, Korea |

- 2019 Invited Speaker
College of Integrative Sciences General Science Seminar, Wesleyan University
Held in Middletown, CT
- 2019 Invited Speaker
OER Professional Development Series, National Institute of Education
Held in Singapore
- 2020 Invited Speaker
CompleNet 2020: 11th International Conference on Complex Networks
Held in Exeter, UK (conference postponed due to COVID-19)
- 2020 Keynote Speaker
ACSOS 2020: First IEEE International Conference on Autonomic Computing and Self-Organizing Systems
Held online
- 2021 Invited Speaker
Clarkson Center for Complex Systems Science Seminar Series, Clarkson University
Held online
- 2021 Keynote Speaker
DB3D 2021: Don Bosco-Binghamton Big Data Online Conference
Held online
- 2022 Invited Speaker
Complex Systems & Data Science Seminar Series
Vermont Complex Systems Center, University of Vermont
Held in Burlington, VT
- 2022 Keynote Speaker
Monash Prato Dialogue: AI Summit
Held in Prato, Italy
- 2023 Invited Speaker
SUNY Sullivan Healthcare Conference
Held in Sullivan, NY
- 2023 Keynote Speaker
Monash Prato Dialogue: AI Summit
Held in Prato, Italy
- 2023 Semi-Plenary Speaker
The VI AMMCS International Conference
Held in Waterloo, Ontario, Canada
- 2023 Invited Speaker
Santa Fe Institute Seminar
Held in Santa Fe, New Mexico
- 2023 Invited Speaker
Applied and Computational Mathematics Seminar, Dartmouth College

Held in Hanover, NH

- 2023 Keynote Speaker
International Conference on Artificial Intelligence, Communication, IoT, Data Engineering and Security (IACIDS 2023)
Held in Pune/Lavasa, India (hybrid)
- 2023 Keynote Speaker
The 22nd International Symposium on Knowledge and Systems Sciences (KSS 2023)
Held in Guangzhou, China
- 2023 Keynote Speaker
International Conference on Mathematical Modelling and Computational Intelligence (ICMMCI 2023)
Held in Chennai, India
- 2024 Invited Speaker
The 8th International Vision Seminar on Artificial Intelligence
Held in Kolkata, India
- 2024 Invited Speaker
The 12th Satellite Symposium on Computational Social Science
Conference on Complex Systems 2024 (CCS 2024)
Held in Exeter, UK
- 2024 Keynote Speaker
The 5th International Conference on Data Science, Computation and Security (IDSCS 2024)
Held online
- 2024 Keynote Speaker
The 5th World Conference on Complex Systems (WCCS 2024)
Held in Casablanca, Morocco

Honors and Awards

- 1996 Best Presentation Award
Fujitsu Fifth Parallel Computing Workshop (PCW'95 Japan)
- 2008 Guest Scientist
Max Planck Institute for the Physics of Complex Systems, Dresden, Germany
- 2010 Best Presentation Award
IPJS SIG-Mathematical Modeling and Problem Solving Meeting #81
Fukuoka, Japan
- 2011 Guest Scientist
Max Planck Institute for the Physics of Complex Systems, Dresden, Germany
- 2011 Best Poster Award
Eleventh European Conference on Artificial Life (ECAL 11)
Held in Paris, France

- 2015 Best Contributed Talk
NetSci 2015 Satellite Symposium on Controlling Complex Networks
Held in Zaragoza, Spain
- 2015 Guest Scientist
Max Planck Institute for the Physics of Complex Systems, Dresden, Germany
- 2016 Chancellor's Award for Excellence in Teaching
State University of New York
Amount: \$1,000
- 2016 Lois B. DeFleur Faculty Prize for Academic Achievement
Binghamton University
Amount: \$10,000
- 2016 ISAL Exceptional Service Award
International Society for Artificial Life
- 2016-2017 Guest Scientist
Max Planck Institute for the Physics of Complex Systems, Dresden, Germany
- 2017 First Place, "Imagining Science" category
The Art of Science competition
(Work title: "Visualized for the Blind")
Binghamton University
- 2017 Best Poster Award (lead student author: Benjamin James Bush)
The 2017 International School and Conference on Network Science (NetSci 2017)
Held in Indianapolis, IN
- 2018 ISAL Outstanding Paper of the Decade (2003-2013) Award
(Swarm Chemistry, Artificial Life 15(1), 105-114, 2009)
International Society for Artificial Life
- 2019-2020 Guest Scientist
Max Planck Institute for the Physics of Complex Systems, Dresden, Germany
- 2021 Recognition Award for Outstanding Faculty Service
Thomas J. Watson College of Engineering and Applied Science
Binghamton University
- 2022 Outstanding Graduate Director Award
Binghamton University
- 2022 Chancellor's Award for Excellence in Faculty Service
State University of New York
- 2024 Best Division Paper Award (lead author: Fuhe Jin)
Communication, Digital Technology, and Organization (CTO) Division
The 84th Annual Meeting of the Academy of Management (AOM 2024)
Held in Chicago, IL

2024	Lyceum Binghamton University Faculty Award Lyceum Life-Long Learning Institute Binghamton University
2024	Academician International Academy for Systems and Cybernetic Sciences (IASCYS)
2024-2025	Guest Scientist Max Planck Institute for the Physics of Complex Systems, Dresden, Germany
2024-2025	Academic Impact Award (Sustainability: We need to focus on overall system outcomes rather than simplistic targets, <i>People and Nature</i> , 6 (2), 391-401, 2024) Research Institute of Business Administration, Waseda University
2024-2025	Academic Impact Award (Swarm systems as a platform for open-ended evolutionary dynamics, <i>Philosophical Transactions of the Royal Society A</i> , 383, 20240143, 2025) Research Institute of Business Administration, Waseda University
2025	Second Place, “Visualizing the Unseen” category The Art of Science competition (Work title: “Trajectories of Northern Lights”) Binghamton University

Academic Memberships

ISAL (International Society for Artificial Life)
 CSS (Complex Systems Society) & CSS US Northeast Chapter
 NetSci (Network Science Society)
 IEEE (Institute of Electrical and Electronics Engineers)
 IEEE Computational Intelligence Society

Teaching

1999 -2002	Teaching Assistant at several NECSI Courses and Advanced Training Programs New England Complex Systems Institute
2002-2005	Course development and instruction for undergraduate and graduate programs Department of Human Communication, UEC <ul style="list-style-type: none"> - Algorithms and Data Structures (for sophomores) - Graphs and Dynamical Networks (for sophomores and international students in English) - Introduction to Computer Science (for sophomores and juniors) - Introduction to Information Theory (for juniors) - Mathematical Modeling and Simulation (for juniors) - Advanced Lectures on Emergent Communication Systems Design (for graduates and international students in English)

- Other courses co-taught with other faculty
 - Introductory Seminar on Human Communication (for freshmen)
 - Topics on Modern Science and Technology (for sophomores)
 - Academic Reading in English (for juniors)
 - Fundamentals of Media Communication (for graduates)

Senior thesis project supervision for nineteen undergraduate students
Department of Human Communication, UEC

Master thesis project supervision for three graduate students
Department of Human Communication, UEC

Master thesis project remote supervision for two graduate students
Section Computational Science, University of Amsterdam, the Netherlands

Research supervision for one visiting researcher
Department of Human Communication, UEC

- 2003-2005 Part-time Lecturer
Intensive Course on Complex Systems Science II: Invitation to Self-Replication Studies
Department of Complex Systems Science
Graduate School of Information Science, Nagoya University, Japan
- 2003 Program Coordinator
An Intersection between Machines and Life -- Creating Artificial Systems That Exhibit
Lifelike Behavior
UEC Open Lecture Series, UEC, Japan
- 2006-2024 Course development and instruction for undergraduate and graduate programs
Departments of Bioengineering/Systems Science and Industrial Engineering, Binghamton
University, SUNY, USA
- BE-201/BIOL-333: Self-Organizing Systems (for sophomores)
 - BE-410/BME-515: Complexity in Biological Systems (for seniors and graduates)
 - BE-461: Exploring Social Dynamics (for juniors and seniors)
 - BME-510: Modeling Complex Biological Systems (for graduates)
 - BME-523: Dynamics of Complex Networks (for graduates)
 - SSIE/BME-524: Graduate Seminar in Complex Systems Science (for graduates)
 - SSIE-523: Collective Dynamics of Complex Systems (for graduates)
 - SSIE-500: Computational Tools (for graduates)
 - SSIE-641: Advanced Topics in Network Science (for advanced graduates)
- PhD/Master thesis project supervision for a number of graduate students
Departments of Bioengineering & Systems Science and Industrial Engineering,
Binghamton University, SUNY, USA
- 2008-2020 Instructor
New England Complex Systems Institute Summer/Winter Schools
Cambridge, MA
- CX-201: Complex Physical, Biological and Social Systems (2009-)
 - CX-102: Complex Systems and Computer Programming (2010-)

- CX-202: Complex Systems Modeling and Networks (2008-)
 - CX-203: Methods for the Study of Complex Systems (2008-2009)
 - Introduction to Nonlinear Dynamics and Spatial Pattern Formation (2014)
- 2008 Invited Lecturer
Second Annual French Complex Systems Summer School
Complex Systems Institute Paris Ile-de-France (ISC-PIF), Paris, France
- Continuous space, lattices and swarms: Pattern formation in complex systems
- 2010-2015 Co-Organizer and Research Supervisor
NetSci High: High School Student Research on Network Science
- Collaboration with Stephen Uzzo, Tara Chudoba and Catherine Cramer (New York Hall of Science), H. Eugene Stanley and Paul Trunfio (Boston University), Lori Sheetz (USMA West Point)
- Supervision of student projects at Maine-Endwell High School, Endwell, NY, and Vestal High School, Vestal, NY
- Introductory lectures and labs on network modeling and analysis for high school students and teachers at NetSci High Summer Camp
- 2011 Invited Lecturer
First NWO (Netherlands Organization for Scientific Research) Complexity Winter School
Zandvoort, the Netherlands
- Introduction to complex systems, nonlinear dynamics and chaos
- Complex systems modeling and simulation in Python
- 2015-2017 Organizer and Research Supervisor
Computational Understanding of Living Systems (COULS) Program
- Supervision of student projects at Vestal High School, Vestal, NY
- 2016 Invited Lecturer
Intensive Course of Network and Agent-Based Modeling
Waseda University, Tokyo, Japan
- 2017-2022 Course development and instruction for undergraduate, graduate and international programs
Computational Approaches to Complex Systems and Networks with Python
School of Commerce, Waseda University, Tokyo, Japan
- 2018 Invited Lecturer
Self-Organizing Artifacts: Artificial Chemistry, Artificial Life, and Morphogenetic Engineering
University of Tokyo, Japan
- 2018-present Course development and instruction
Introduction to Python Programming (one-day/online continuing education course)
Watson Office of Industrial Outreach
Thomas J. Watson School of Engineering and Applied Science
Binghamton University
- 2019-2020 Course development and instruction for freshmen

UNIV 101R: Complex Networks Around Us
Binghamton University

Student Advising

Continuously updated and available online at <https://bingdev.binghamton.edu/sayama/#members>

Academic Services

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| 1998-2005 | Seminar Series Organizer
Artificial Life Independent Seminar in Tokyo / Ad-hoc Learning Initiative on Systems and Theories (ALIST) |
| 1999 | Meeting Organizer
“What’s Been Done, What’s Not Yet, and What Comes Next in Artificial Life”
ALIREN + ALIST Joint Meeting
Held at University of Tokyo, Japan |
| 1999-2005 | Board Member
ALIREN, Japan |
| 2000 | Meeting Co-Organizer
The 20th SIG Meeting on System Engineering: New Trends in Artificial Life
Society of Instrument and Control Engineers
Held at Nagoya University, Japan |
| 2001 | Reviewer
ECAL 2001: The Sixth European Conference on Artificial Life
Held in Prague, Czech Republic |
| 2002-present | Affiliate
New England Complex Systems Institute |
| 2002-2003 | Guest Editor (with Dan Braha, Mark Klein, and Yaneer Bar-Yam)
Concurrent Engineering: Research and Application (CERA) Journal Special Issue:
“A Complex Systems Perspective on Concurrent Engineering” |
| 2003 | Program Committee Member
The 2003 Annual Conference of the Japanese Cognitive Science Society
Held at UEC, Japan |
| 2004 | Program Committee Member
ICCS 2004: The Fifth International Conference on Complex Systems
Held in Boston, MA |
| 2004 | Meeting Organizer
“Emergent Evolution in Artificial Life”
A workshop in the Sixth Annual Meeting of the Society of Evolutionary Studies, Japan
Held at University of Tokyo, Japan |

- 2004 Program Committee Member
ALIFE IX: The Ninth International Conference on the Simulation and Synthesis of Living Systems
Held in Boston, MA
- 2004 Program Committee Member
ACA 2004: A Workshop on Artificial Chemistry and Its Applications
Part of ALIFE IX: The Ninth International Conference on the Simulation and Synthesis of Living Systems
Held in Boston, MA
- 2005 Program Committee Member
Special Session on Artificial Life in the 2005 IEEE Congress on Evolutionary Computation (CEC 2005)
Held in Edinburgh, UK
- 2005 Program Committee Member
ACA 2005: A Workshop on Artificial Chemistry and Its Applications
Part of ECAL 2005: The Eighth European Conference on Artificial Life
Held in Kent, UK
- 2006 Program Committee Member
Workshop on Artificial Chemistries and Artificial Life
Part of AISB'06: Adaptation in Artificial and Biological Systems
Planned to be held in Bristol, UK (cancelled)
- 2006 Scientific Committee Member
Workshop on Machine Self-Replication
Part of ALIFE X: The Tenth International Conference on the Simulation and Synthesis of Living Systems
Held in Bloomington, IN
- 2006 Program Committee Member
GECCO 2006: The 2006 Genetic and Evolutionary Computation Conference (Artificial Life, Evolutionary Robotics, Adaptive Behavior Track)
Held in Seattle, WA
- 2006 Program Committee Member
ICCS 2006: The Sixth International Conference on Complex Systems
Held in Boston, MA
- 2006-2011 Technical Committee Member
Technical Committee on Complex System Empowered Biological Networking
IEICE Communications Society, Japan
- 2006-2007 Reviewer
The First IEEE Symposium on Artificial Life (IEEE ALIFE '07)
Held in Honolulu, HI
- 2007 Reviewer
The 2007 IEEE Congress on Evolutionary Computation (CEC 2007)
Held in Singapore

- 2007 Co-chair
Workshop on Machine Epigenesis
Part of ECAL 2007: The Ninth European Conference on Artificial Life
Planned to be held in Lisbon, Portugal (cancelled)
- 2007 Special Sessions Chair and Executive Committee Member
ICCS 2007: The Seventh International Conference on Complex Systems
Held in Boston, MA
- 2007 Program Committee Member
The Second International Workshop on Natural Computing
Held in Nagoya, Japan
- 2007 Scientific Advisory Board Member
Lifeboat Foundation
- 2008 Program Committee Member
ALIFE XI: The Eleventh International Conference on the Simulation and Synthesis of Living Systems
Held in Winchester, UK
- 2008 Technical Committee Member
The 2008 IEEE Congress on Evolutionary Computation (CEC 2008)
Part of WCCI 2008: The 2008 IEEE World Congress on Computational Intelligence
Held in Hong Kong, China
- 2008 Reviewer
The 18th International Conference on Artificial Neural Networks in Engineering (ANNIE 2008)
Held in St. Louis, MO
- 2008 Program Committee Member
The Third International Workshop on Natural Computing
Held in Yokohama, Japan
- 2008-2009 Co-Editor (with Thilo Gross)
Adaptive Networks: Theory, Models and Applications
Springer/NECSI Studies on Complexity Series
Published in 2009
- 2008-2009 Program Committee Member
The Second IEEE Symposium on Artificial Life (IEEE ALIFE '09)
Held in Nashville, TN
- 2008-2012 Editor
IPSI Transactions on Mathematical Modeling and Its Applications
- 2008 Academic Editorial Board Member
Journal of the Evolutionary Studies Consortium (EvoS Journal)
- 2009 Program Committee Member

- The 2009 IEEE Congress on Evolutionary Computation (CEC 2009)
Held in Trondheim, Norway
- 2009 Co-Organizer
The First International Workshop on Morphogenetic Engineering (MEW 2009)
Held in Paris, France
- 2009 Program Committee Member
The Fourth International Workshop on Natural Computing
Held in Himeji, Japan
- 2009 Program Committee Member
International Workshop on Complex Collective Systems
Part of the Eighth International Conference on Parallel Processing and Applied Mathematics (PPAM 2009)
Held in Wroclaw, Poland
- 2009-2012 Co-Editor (with Rene Doursat and Olivier Michel)
Morphogenetic Engineering: Toward Programmable Complex Systems
Springer/NECSI Studies on Complexity Series
Published in December 2012
- 2009-2010 Special Sessions Chair
Special Session on Morphogenetic Engineering
Part of ANTS 2010: Seventh International Conference on Swarm Intelligence
Held in Brussels, Belgium
- 2009-present Occasional Proposal Reviewer
National Science Foundation
- 2010 Evaluation Committee Member
Evolutionary Art Competition
GECCO 2010: The 2010 Genetic and Evolutionary Computation Conference
Held in Portland, OR
- 2010 Reviewer/Program Committee Member
The 2010 IEEE Congress on Evolutionary Computation (CEC 2010) and
Special Session on Bio-Inspired Self-Organizing Multi-Agent Systems
Part of WCCI 2010: The 2010 IEEE World Congress on Computational Intelligence
Held in Barcelona, Spain
- 2010 Program Committee Member
ALIFE XII: The 12th International Conference on the Synthesis and Simulation of Living Systems
Held in Odense, Denmark
- 2010 Program Committee Member/Special Track Chair
The Fifth International Conference on Bio-Inspired Models of Network, Information and Computing Systems (BIONETICS 2010) and
Special Track on State-Topology Coevolution in Adaptive Networks (STCAN 2010)
Special Track on Bioinformatics
Held in Boston, MA

- 2010-2011 Technical Program Committee Member
International Workshop on Self-Organizing Systems (IWSOS)
Held in Karlsruhe, Germany
- 2010-2011 Co-Chair
The Third IEEE Symposium on Artificial Life (IEEE ALIFE 2011)
Held in Paris, France
- 2010-2011 Co-Organizer (with Stephen Uzzo and Tara Chudoba)
NetSci-High: International High School Student Poster Competition on Network Science
Part of NetSci 2011: International School and Conference on Network Science
Held in Budapest, Hungary
- 2010-2011 Program Chair
ICCS 2011: The Eighth International Conference on Complex Systems
Held in Boston, MA
- 2010-2011 Program Committee Member
The Fifth Australian Conference on Artificial Life (ACAL 2011)
Held in Perth, Australia
- 2010-2011 Program Committee Member
Second International Workshop on Complex Collective Systems
Part of the Ninth International Conference on Parallel Processing and Applied Mathematics
(PPAM 2011)
Held in Torun, Poland
- 2011 Program Committee Member
Tutorial Organizer, Artificial Chemical Computing Systems
Workshop Organizer, 3rd Morphogenetic Engineering Workshop
Eleventh European Conference on Artificial Life (ECAL 11)
Held in Paris, France
- 2011 Program Committee Member
Fifth IEEE International Conference on Self-Adaptive and Self-Organizing Systems (SASO
2011)
Held in Ann Arbor, MI
- 2011-present Proposal Review Panel Member
National Science Foundation
- 2011 Program Committee Member
International Conference on Advanced Computer Science and Information Systems 2011
(ICACSIS 2011)
Held in Jakarta, Indonesia
- 2011-2015 Elected Member, Board of Directors
International Society for Artificial Life (ISAL)
- 2011-2012 Technical Program Committee Member
Sixth International Workshop on Self-Organizing Systems (IWSOS 2012)

- Held in Delft, the Netherlands
- 2012 Program Committee Member
GECCO 2012: The 2012 Genetic and Evolutionary Computation Conference
(Generative and Developmental Systems Track)
Held in Philadelphia, PA
- 2012 Program Committee Member
Sixth IEEE International Conference on Self-Adaptive and Self-Organizing Systems (SASO 2012)
Held in Lyon, France
- 2012 Co-Organizer
NetSciEd: Satellite Symposium on Education “Infuse Network Science into K-12 and Undergraduate Education”
Part of the 2012 International School and Conference on Network Science
Held in Evanston, IL
- 2012 Program Committee Member
Thirteenth International Conference on the Simulation and Synthesis of Living Systems (ALIFE 13)
Held in East Lansing, MI
- 2012-present Vice Chair
IEEE CIS Artificial Life and Complex Adaptive Systems Task Force
- 2012-2013 Co-Chair
The Fourth IEEE Symposium on Artificial Life (IEEE ALIFE 2013)
Held in Singapore
- 2012-2020 Assistant Editor
Complex Adaptive Systems Modeling (SpringerOpen)
- 2012-2021 Review Editor
Frontiers in Computational Physics
- 2012-2014 External Consultant
Science and Technology Foresight Center
National Institute of Science and Technology Policy
Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan
- 2012-2013 Technical Program Committee Member
Seventh International Workshop on Self-Organizing Systems (IWSOS 2013)
Held in Palma de Mallorca, Spain
- 2012-2013 Program Committee Member
The Seventh International Workshop on Natural Computing
Held in Tokyo, Japan
- 2013 Co-Chair
NetSci 2013 Satellite Symposium on State-Topology Coevolution in Adaptive Networks (STCAN 2013)

- Part of the 2013 International School and Conference on Network Science (NetSci 2013)
Held in Copenhagen, Denmark
- 2013 Co-Organizer
Second Network Science In Education Satellite Symposium (NetSciEd2)
Part of the 2013 International School and Conference on Network Science (NetSci 2013)
Held in Copenhagen, Denmark
- 2013 Program Committee Member
GECCO 2013: The 2013 Genetic and Evolutionary Computation Conference
(Generative and Developmental Systems Track)
Held in Amsterdam, The Netherlands
- 2013 Program Committee Member
Third International Workshop on Complex Collective Systems
Part of the Tenth International Conference on Parallel Processing and Applied Mathematics
(PPAM 2013)
Held in Warsaw, Poland
- 2013 Technical Program Committee Member
The 2013 IEEE Congress on Evolutionary Computation (IEEE CEC 2013)
Program Committee Member
CEC 2013 Special Session on Design, Programming and Learning of Complex Systems
Held in Cancun, Mexico
- 2013 Program Committee Member
Twelfth European Conference on Artificial Life (ECAL 2013)
Held in Taormina, Italy
- 2014 Co-Organizer
Third Network Science In Education Satellite Symposium (NetSciEd3)
Part of the 2014 International School and Conference on Network Science (NetSci 2014)
Held in Berkeley, CA
- 2013-2014 Program Chair
Fourteenth International Conference on the Synthesis and Simulation of Living Systems
(ALIFE 14)
Held in New York, NY
- 2014 Co-Chair
Fourth International Morphogenetic Engineering Workshop (MEW 2014)
Part of the Fourteenth International Conference on the Synthesis and Simulation of Living
Systems (ALIFE 14)
Held in New York, NY
- 2014 Program Committee Vice Chair
Eighth International Conference on Bio-inspired Information and Communications
Technologies
Held in Boston, MA
- 2014 Program Committee Member
Workshop on Massive Data Flow: Understanding the Complex Dynamics of the Web

	Part of the ACM Web Science Conference 2014 (WebSci14) Held in Bloomington, IN
2014	Program Committee Member Quantifying Success 2.0 Workshop Part of the 2014 European Conference on Complex Systems (ECCS '14) Held in Lucca, Italy
2014	Scientific Committee Member Emergence in Chemical Systems 4.0 Conference Held in Anchorage, AK
2014-2015	Review Editor Frontiers in Robotics and AI / Computational Intelligence
2014-2015	Co-Organizer Fourth Network Science In Education Satellite Symposium (NetSciEd4) Part of the 2015 International School and Conference on Network Science (NetSci 2015) Held in Zaragoza, Spain
2014-2015	Program Committee Member Co-Chair, Special Session on Morphogenetic Engineering ECAL 2015: The 2015 European Conference on Artificial Life Held in York, UK
2014-2016	Guest Editor Artificial Life The Artificial Life 14 Conference Special Issue
2015	Reviewer The 2015 IEEE Congress on Evolutionary Computation (IEEE CEC 2015) Held in Sendai, Japan
2015	Program Committee Member Fourth International Workshop on Complex Collective Systems Part of the Eleventh International Conference on Parallel Processing and Applied Mathematics (PPAM 2015) Held in Krakow, Poland
2015	Co-Chair The Fifth IEEE Symposium on Artificial Life (IEEE ALIFE 2015) Held in Cape Town, South Africa
2015-2023	Editorial Board Member International Journal of Parallel, Emergent and Distributed Systems (Taylor & Francis)
2015-2024	Editorial Board Member Applied Network Science (SpringerOpen)
2015-present	Committee Member IEEE CIS Task Force on Bio-Inspired Self-Organizing Collective Systems

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| 2015-present | Editorial Board Member
Complex & Intelligent Systems (SpringerOpen) |
| 2015-2016 | Reviewer
The 2016 IEEE Congress on Evolutionary Computation (IEEE CEC 2016)
Held in Vancouver, Canada |
| 2015-2016 | Co-Organizer
Co-Chair, Workshop on Morphogenetic Engineering
Program Committee Member, Workshop on Guided Self-Organization
Fifteenth International Conference on the Synthesis and Simulation of Living Systems (ALIFE XV)
Held in Cancun, Mexico |
| 2015-2021 | Elected Council Member
Complex Systems Society (CSS) |
| 2016 | Program Committee Member
CCS'16: The 2016 Conference on Complex Systems
Held in Amsterdam, the Netherlands |
| 2016 | Co-Organizer
Fifth NetSci Satellite Symposium on Network Science and Education (NetSciEd5)
Part of the 2016 International School and Conference on Network Science (NetSci 2016)
Held in Seoul, Korea |
| 2016 | Program Committee Member
First International Workshop on Self-Organising Construction
Part of the 10th IEEE International Conference on Self-Adaptive and Self-Organizing Systems (SASO 2016)
Held in Augsburg, Germany |
| 2016-present | Associate Editor
Artificial Life (MIT Press) |
| 2016 | Program Committee Member
Fifth International Workshop on Complex Networks and Their Applications
Held in Milan, Italy |
| 2016-2022 | Elected Executive Committee Member
Complex Systems Society (CSS) |
| 2017 | Co-Organizer
Sixth NetSci Satellite Symposium on Network Science and Education (NetSciEd6)
Part of the 2017 International School and Conference on Network Science (NetSci 2017)
Held in Indianapolis, IN |
| 2017 | Program Committee Member
ECAL 2017: The 2017 European Conference on Artificial Life
Held in Lyon, France |
| 2017 | Co-Chair, Workshop on Morphogenetic Engineering |

- ECAL 2017: The 2017 European Conference on Artificial Life
Held in Lyon, France
- 2017 Program Committee Member
CCS'17: The 2017 Conference on Complex Systems
Held in Cancun, Mexico
- 2017 Co-Chair
Second CCS Satellite Symposium on Complex Systems and Education
Part of CCS'17: The 2017 Conference on Complex Systems
Held in Cancun, Mexico
- 2017 Program Committee Member
Sixth International Workshop on Complex Networks and Their Applications
Held in Lyon, France
- 2017 Program Committee Member
Fifth International Workshop on Complex Collective Systems
Part of the Twelfth International Conference on Parallel Processing and Applied Mathematics (PPAM 2017)
Held in Lublin, Poland
- 2017 Co-Chair
Sixth IEEE Symposium on Artificial Life (IEEE ALIFE 2017)
Held in Honolulu, HI
- 2017-2018 General Chair
First Northeast Regional Conference on Complex Systems (NERCCS 2018)
Held in Binghamton, NY
- 2017-2018 Organizing Committee Member
The 2018 International Conference on Artificial Life (ALIFE 2018)
Held in Tokyo, Japan
- 2017-present Editorial Board Member
Complexity (Wiley)
- 2017-present Editorial Board Member
Complex Systems (Complex Systems Publications)
- 2018 Co-Organizer
NetSciEd 2018: NetSci Satellite Symposium on Network Science and Education
Part of the 2018 International School and Conference on Network Science (NetSci 2018)
Held in Paris, France
- 2018 Co-Organizer
Special session on Bridging Network Science and Graph Theory
Part of the 2018 SIAM Conference on Applied Mathematics Education (ED18)
Held in Portland, OR
- 2018 Program Committee Member
Co-Organizer, Complex Systems: Literacy and Learning Workshop

- ICCS 2018: The Ninth International Conference on Complex Systems
Held in Cambridge, MA
- 2018 Program Committee Member
Second International Workshop on Self-Organising Construction
Part of the 12th IEEE International Conference on Self-Adaptive and Self-Organizing Systems (SASO 2018)
Held in Treno, Italy
- 2018 Program Committee Member
CCS'18: The 2018 Conference on Complex Systems
Held in Thessaloniki, Greece
- 2018-2019 Program Committee Member
CompleNet 2019: Tenth International Conference on Complex Networks
Held in Tarragona, Spain
- 2018-2019 General Chair
Second Northeast Regional Conference on Complex Systems (NERCCS 2019)
Held in Binghamton, NY
- 2018-present Founding Member
US Northeast Chapter of the Complex Systems Society
- 2018-2021 CCS Steering Committee Member
Complex Systems Society (CSS)
- 2019 Co-Organizer
NetSciEd 2019: NetSci Satellite Symposium on Network Science and Education
Part of the 2019 International School and Conference on Network Science (NetSci 2019)
Held in Burlington, VT
- 2019 Program Committee Member
The 2019 Conference on Artificial Life (ALIFE 2019)
Held in Newcastle upon Tyne, UK
- 2019 Co-Organizer
Computational Approaches to Social Dynamics: Data, Modeling, Simulation, and Hybrids
A Satellite Workshop of the 2019 Conference on Artificial Life (ALIFE 2019)
Held in Newcastle upon Tyne, UK
- 2019-present Chief Editor
Complexity (Wiley)
- 2019-present Founding Editor-in-Chief
Northeast Journal of Complex Systems (CSS US Northeast Chapter / Binghamton University)
- 2019 Program Committee Member
Third International Workshop on Self-Organising Construction
Part of the 13th IEEE International Conference on Self-Adaptive and Self-Organizing Systems (SASO 2019)
Held in Umeå, Sweden

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| 2019 | Program Committee Member
Sixth International Workshop on Complex Collective Systems
Part of the Thirteenth International Conference on Parallel Processing and Applied Mathematics (PPAM 2019)
Held in Bialystok, Poland |
| 2019 | Guest Editor, Special Issue on Leadership in the Digital Era: Social Media, Big Data, Virtual Reality, Computational Methods, and Deep Learning
Leadership Quarterly |
| 2019-present | Advisory Board Member
Field of Excellence Complexity of Life in Basic Research and Innovation (COLIBRI)
University of Graz, Austria |
| 2019 | Program Committee Member
CCS 2019: The 2019 Conference on Complex Systems
Held in Singapore |
| 2019 | Co-Organizer
Fourth CCS Satellite Symposium on Complex Systems and Education: Applications in Language Pedagogy, Assessment, and Complexity Learning
Part of CCS 2019: The 2019 Conference on Complex Systems
Held in Singapore |
| 2019-present | Partner
Alternative Machines, Inc.
Tokyo, Japan |
| 2019 | General Chair
Seventh IEEE Symposium on Artificial Life (IEEE ALIFE 2019)
Held in Xiamen, China |
| 2019-2020 | General Chair
NetSci-X 2020: International School and Conference on Network Science
Held in Tokyo, Japan |
| 2019-present | Board Member
Network Science Society |
| 2019-2020 | Senior Program Committee Member
The 2020 Conference on Artificial Life (ALIFE 2020)
Held online |
| 2019-2020 | Program Committee Member
CompleNet 2020: 11th International Conference on Complex Networks
Held in Exeter, UK |
| 2019-2020 | Communications Chair
Third Northeast Regional Conference on Complex Systems (NERCCS 2020)
Held online |

2019-present	Editorial Board Member International Journal of Complexity in Education (Mercy College)
2020	Executive Committee Member ICCS 2020: The Tenth International Conference on Complex Systems Held online
2020	Organizing Committee Member NetSci 2020: International School and Conference on Network Science Held online
2020	Co-Organizer NetSciEd 2020: Symposium on Network Science and Education Held online
2020	Organizing Committee Member CCS 2020: The Conference on Complex Systems 2020 Held online
2020	Program Committee Member Ninth International Conference on Complex Networks and Their Applications Held online
2020	Co-Chair Eighth IEEE Symposium on Artificial Life (IEEE ALIFE 2020) Held online
2020	Co-Organizer Fifth CCS Satellite Symposium on Complex Systems and Education: Research and Practice Part of CCS 2020: The 2020 Conference on Complex Systems Held online
2020-2021	General Chair Fourth Northeast Regional Conference on Complex Systems (NERCCS 2021) Held online
2020-2021	Scientific Committee Member CompleNet Live 2021: 12th International Conference on Complex Networks Held online
2020-2021	Senior Program Committee Member The 2021 Conference on Artificial Life (ALIFE 2021) Held online
2021-present	Board Member SIG Artificial Life Japanese Society for Artificial Intelligence
2021-2022	External Consultant Science and Technology Foresight Center National Institute of Science and Technology Policy Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan

- 2021 Co-Organizer
NetSciEd 2021: Satellite Symposium on Network Science and Education
Part of Networks 2021: A Joint Sunbelt and NetSci Conference
Held online
- 2021 Program Committee Member
Tenth International Conference on Complex Networks and Their Applications
Held in Madrid, Spain
- 2021 Program Committee Member
CCS 2021: The Conference on Complex Systems 2021
Held in Lyon, France
- 2021 Co-Organizer
Sixth CCS Satellite Symposium on Complex Systems and Education: From Theory to Research to Practice
Part of CCS 2021: The 2021 Conference on Complex Systems
Held in Lyon, France
- 2021-2022 Communications Chair
Fifth Northeast Regional Conference on Complex Systems (NERCCS 2022)
Held in Buffalo, NY
- 2021-present Elected Member, Board of Directors
International Society for Artificial Life (ISAL)
- 2021-2022 Program Committee Member
NetSci-X 2022: International School and Conference on Network Science
Held in Porto, Portugal
- 2021-2022 Special Sessions Chair
The 2022 Conference on Artificial Life (ALIFE 2022)
Held online / Trento, Italy
- 2022 Program Committee Member
Seventh International Workshop on Complex Collective Systems
Part of the Fourteenth International Conference on Parallel Processing and Applied Mathematics (PPAM 2022)
Held in Gdansk, Poland
- 2022 Co-Chair
Ninth IEEE Symposium on Artificial Life (IEEE ALIFE 2022)
Held in Singapore
- 2022 Program Committee Member
Eleventh International Conference on Complex Networks and Their Applications
Held in Palermo, Italy
- 2022 Co-Organizer
NetSciEd 2022: Satellite Symposium on Network Science and Education
Part of 2022 International School and Conference on Network Science (NetSci 2022)

	Held online
2022	Program Committee Member CCS 2022: The Conference on Complex Systems 2022 Held in Palma de Mallorca, Spain
2022	Program Committee Member ComplexDataBlocks: Data Science and Complexity on the Blockchain Satellite Symposium In CCS 2022: The Conference on Complex Systems 2022 Held in Palma de Mallorca, Spain
2022-present	Finance Committee Co-Chair Network Science Society
2022-2023	Program Committee Member NetSci-X 2023: International School and Conference on Network Science Held in Buenos Aires, Argentina
2023	Co-Organizer NetSciEd 2023: Satellite Symposium on Network Science and Education Part of 2023 International School and Conference on Network Science (NetSci 2023) Held in Vienna, Austria
2023	Senior Program Committee Member The 2023 Conference on Artificial Life (ALIFE 2023) Held in Sapporo, Japan
2023	Co-Organizer The Distributed Ghost: Cellular Automata, Distributed Dynamical Systems, and Their Applications to Intelligence Workshop at the 2023 Conference on Artificial Life (ALIFE 2023) Held in Sapporo, Japan
2023	Scientific Committee Member The 2023 Conference on Complex Systems (CCS 2023) Held in Salvador, Brazil
2023	General Co-Chair and Technical Committee Chair IDSCS 2023: Fourth International Conference on Data Science, Computation and Security Held online
2023-2024	Program Committee Member NetSci-X 2024: International School and Conference on Network Science Held in Venice, Italy
2023-2024	Reviewer CompleNet 2024: 15th International Conference on Complex Networks Held in Exeter, UK
2023-2024	Co-Organizer Special Session: Artificial Life In the IEEE World Congress on Computational Intelligence (WCCI) 2024

	Held in Yokohama, Japan
2023-2024	Technical Program Committee Reviewer The 2024 IEEE Congress on Evolutionary Computation (IEEE CEC 2024) In the IEEE World Congress on Computational Intelligence (WCCI) 2024 Held in Yokohama, Japan
2023-present	Advisory Group Member Complex Systems Theory Violence, Health, and Society (VISION) Consortium UK Prevention Research Partnership
2023-present	Editorial Board Member npj Complexity (Nature Portfolio)
2023-present	Elected Council Member Complex Systems Society (CSS)
2023-present	Elected Executive Committee Member Complex Systems Society (CSS)
2023-2024	Program Committee Member Complex Systems Track Genetic and Evolutionary Computation Conference (GECCO-2024) Held in Melbourne, Australia and online
2024-2025	Advisory Board Member Department of Data Science Christ University, Pune/Lavasa, India
2024-present	Advisory Board Member Complex Systems Program Portland State University, OR
2024-present	CCS Steering Committee Member Complex Systems Society (CSS)
2024-present	Vice President International Society for Artificial Life (ISAL)
2024	Co-Organizer NetSciEd 2024: Satellite Symposium on Network Science and Education Part of 2024 International School and Conference on Network Science (NetSci 2024) Held in Quebec City, Canada
2024	Reviewer IC2S2 2024: 10th International Conference on Computational Social Science Held in Philadelphia, PA
2024	Program Committee Member The 2024 Conference on Artificial Life (ALIFE 2024) Held in Copenhagen, Denmark

2024	Co-Organizer The Distributed Viking: Cellular Automata, Distributed Dynamical Systems, and Their Applications to Intelligence Special Session at the 2024 Conference on Artificial Life (ALIFE 2024) Held in Copenhagen, Denmark
2024	Program Committee Member The 2024 Conference on Complex Systems (CCS 2024) Held in London/Exeter, UK
2024	Co-Organizer Satellite Symposium on Representation Learning for Complex Systems The 2024 Conference on Complex Systems (CCS 2024) Held in London/Exeter, UK
2024	Program Committee Member Eighth International Workshop on Complex Collective Systems Part of the Fifteenth International Conference on Parallel Processing and Applied Mathematics (PPAM 2024) Held in Ostrava, Czech Republic
2024	General Co-Chair IDSCS 2024: Fifth International Conference on Data Science, Computation and Security Held in Ghaziabad, India/online
2024-2025	General Co-Chair NetSci-X 2025: The 2025 International School and Conference on Network Science Held in Indore, India
2024-2025	Organizing Co-Chair IC ² SMA ² 2025: International Conference on Complex Systems Modeling, Analysis & Applications Held in Pune Lavasa, India/online
2024-2025	Technical Co-Chair The 2025 IEEE Symposium on CI in Artificial Life and Cooperative Intelligent Systems (IEEE ALIFE-CIS 2025) Part of the 2025 IEEE Symposium Series on Computational Intelligence (IEEE SSCI 2025) Held in Trondheim, Norway
2024-2025	General Co-Chair Eighth Northeast Regional Conference on Complex Systems (NERCCS 2025) Held in Binghamton, NY
2024-2025	Program Committee Member NetSci 2025: International School and Conference on Network Science Held in Maastricht, the Netherlands
2024-present	Executive Committee Member US Northeast Chapter of the Complex Systems Society

- 2025 Co-Organizer
NetSciEd 2025: Satellite Symposium on Network Science and Education
Part of 2025 International School and Conference on Network Science (NetSci 2025)
Held in Maastricht, the Netherlands
- 2025 Reviewer
IC2S2 2025: 11th International Conference on Computational Social Science
Held in Norrköping, Sweden
- 2025 Co-Organizer
Satellite Symposium on Complex Systems, Data Analytics, and Human Behavior
The 2025 Conference on Complex Systems (CCS 2025)
Held in Siena, Italy
- 2025 Co-Organizer
Satellite Symposium on Physics of Self-Organization in Complex Systems
The 2025 Conference on Complex Systems (CCS 2025)
Held in Siena, Italy
- 2025 Advisor and Senior Program Committee Member
The 2025 Conference on Artificial Life (ALIFE 2025)
Held in Kyoto, Japan
- 2025 Co-Organizer
The Distributed Ciphers: Cellular Automata, Distributed Dynamical Systems, and Their Applications to Intelligence
Special Session at the 2025 Conference on Artificial Life (ALIFE 2025)
Held in Kyoto, Japan
- 2025 General Co-Chair
IDSCS 2025: Sixth International Conference on Data Science, Computation and Security
Held in Bangalore, India/online
- 2025 Program Committee Member
Fourteenth International Conference on Complex Networks and Their Applications
Held in Binghamton, NY
- 2025-2026 Technical Program Chair
IC²SMA² 2026: International Conference on Complex Systems Modeling, Analysis & Applications
Held in Pune Lavasa, India/online

Also serving as a reviewer for a number of scientific journals and conferences.

Services for Institutes and Departments

- 1999-2002 System Administrator
New England Complex Systems Institute
- 2002-2005 Special Admission Committee Member
Faculty of Electro-Communications, UEC

2002-2005	Department Webpage Committee Member Department of Human Communication, UEC
2003-2004	Curriculum Development Working Group Member Department of Human Communication, UEC
2003-2005	General Admission Committee Member Faculty of Electro-Communications, UEC
2003-2005	Student Advisor Department of Human Communication, UEC
2004-2005	University Planning and Examining Committee Member UEC
2005	Master/Senior Thesis Projects Coordinator Department of Human Communication, UEC
2005	Information Processing Center Steering Committee Member UEC
2005	Faculty Reform Planning Working Group Member Faculty of Electro-Communications, UEC
2006-2010	Publications Committee Member Thomas J. Watson School of Engineering and Applied Science, Binghamton University
2006-2011	Undergraduate Program Committee Member Department of Bioengineering, Binghamton University
2006-2012	Research Committee Member Thomas J. Watson School of Engineering and Applied Science, Binghamton University
2007-2013	Department Webmaster Department of Bioengineering, Binghamton University
2007-2015	Director Collective Dynamics of Complex Systems (CoCo) Research Group Binghamton University
2007-present	Steering Committee Member Evolutionary Studies Program (EvoS), Binghamton University
2007-2015	Advisory Board Member Center for Applied Community Research and Development (CACRD) Binghamton University
2008-present	Faculty Fellow Center for Leadership Studies Binghamton University, State University of New York

2011-2012	Graduate Program Committee Member Department of Bioengineering, Binghamton University
2012-2013	Graduate Program Director Department of Bioengineering, Binghamton University
2012-2015	Research Fellow Center for Applied Community Research and Development (CACRD) Binghamton University
2013-present	Founder and Program Director Advanced Graduate Certificate Program in Complex Systems Science and Engineering Binghamton University
2013-2015	Advisory Committee Member Advisory Committee on Scholarship and Research, Binghamton University
2013	Chair, Graduate Studies Committee Thomas J. Watson School of Engineering and Applied Science, Binghamton University
2014-2020	Affiliated Faculty Member Center for Affective Science, Binghamton University
2015-present	Graduate Program Director and Watson Graduate Studies Committee Member Graduate Programs in Systems Science, Binghamton University
2015-present	Director Center for Collective Dynamics of Complex Systems (CoCo) (until June 2023) / Binghamton Center of Complex Systems (since July 2023), Binghamton University
2015-2017	Faculty Senate Binghamton University
2015-2018	Multilingual Faculty Volunteer Translator Translation and Interpretation Program Multicultural Resource Center, Binghamton University
2015-2016	Ad-Hoc Committee on Teaching Quality Enhancement Thomas J. Watson School of Engineering and Applied Science, Binghamton University
2016-present	Steering Committee Member Sustainable Communities Transdisciplinary Areas of Excellence (TAE) Binghamton University
2017-present	Calculus Advisory Committee Binghamton University
2017-2018	Data Science Initiative Special Committee Binghamton University
2018-2020	Steering Committee Member Data Science Transdisciplinary Areas of Excellence (TAE)

	Binghamton University
2018-present	Faculty Advisor Girls Who Code Binghamton University
2019	Joint Committee on Transdisciplinary and Interdisciplinary Issues Binghamton University
2019-2022	Diversity Committee Thomas J. Watson College of Engineering and Applied Science Binghamton University
2020-2022	Public Health Advisory Group in response to COVID-19 Binghamton University
2021-2023	Faculty Senate Binghamton University
2021-present	Chair (-2022)/Member, Diversity Committee Department of Systems Science and Industrial Engineering, Binghamton University
2021-2025	Graduate Council Binghamton University
2022-2024	Chair, Graduate Studies Committee Thomas J. Watson College of Engineering and Applied Science, Binghamton University
2023-2024	Co-Lead (together with Lijun Yin), Human-Centered AI & Systems Intelligence Thrust Watson Interdisciplinary Research Acceleration Initiative Thomas J. Watson College of Engineering and Applied Science, Binghamton University
2023-present	Information and Educational Technology Committee Binghamton University
2024	Member, SUNY Strategic Research Investment (STRIVE) Artificial Intelligence Task Force (Research and Infrastructure Working Group) State University of New York
2024-present	Member, Data Visualization (DataViz) Interest Group Faculty Liaison Binghamton University

Other Skills

Languages

Programming languages: Python, Mathematica, Julia, Java, C/C++, MATLAB, R, NetLogo, JavaScript, Lisp/Scheme, Pascal, etc.

Fluent in written and spoken English/Japanese

Training

Mental Health First Aider, certified by the Mental Health First Aid USA

Trained Facilitator, Entering Mentoring curricular series, Center for the Improvement of Mentored Experiences in Research (CIMER)