IEEE SYSTEMS, MAN, AND CYBERNETICS MAGAZINE

CALL for PAPERS

Title

Special Issue on E-CARGO and Applications

Scope, purpose, and submission procedure

In the era of Artificial Intelligence (AI), many AI tools, such as Large Language Models, can help people accomplish many low-level intelligent tasks, such as routine problem solving, coding, and even programming. Many low-level jobs have high potential to be replaced by such AI tools. Traditional workers need to master powerful high-level modelling tools to meet these new challenges. E-CARGO/RBC (Environments - Classes, Agents, Roles, Groups, and Objects /Role-Based Collaboration) is a modelling methodology that helps tackle complex problems by designing systematic strategies other than using low-level programming skills. AI stems from our understanding of the world. To comprehend the world, we rely on tools, and one essential tool is modeling. Modeling helps us to grasp the world's complexity, a process that requires consciousness. Consciousness depends on abstraction, which is facilitated by the E-CARGO model. The E-CARGO model serves as an abstract framework for tackling complex systems and has proven effective in various applications. With its extensive potential, E-CARGO can significantly advance both academic research and industrial practices.

This special issue aims to explore the latest advancements in E-CARGO and its applications. We seek to highlight innovative breakthroughs in RBC and adaptive collaboration, emphasizing the practical synergy between these technologies and their applications across diverse industries. By bridging theoretical insights with real-world applications, this special issue aspires to showcase cutting-edge research that demonstrates the transformative potential of E-CARGO.

We encourage authors of top-quality papers accepted by the First IEEE International Symposium (Pending Approval) and the Third IEEE International Summer School on E-CARGO and Applications to submit extended versions. Submissions are also invited from the wider research community, offering an inclusive platform for interdisciplinary contributions. Our goal is to present cutting-edge research that bridges theoretical. progress with real-world impact, advancing intelligent collaboration and providing an interdisciplinary platform for integrating current research in modeling and solving complex problems.

Guest Editors

1. Libo Zhang, Southwest University, China, email: lbzhang@swu.edu.cn

   Libo Zhang (Member, IEEE) is an associate professor at Southwest University in China and a senior member of the China Computer Federation (CCF). He attained an integrated Master's and Ph.D. program from Nanjing University in March 2019, culminating in the conferral of a Ph.D. degree. He serves as the Guest Editor-in-Chief for Frontiers in Physics (WOS, Q2) and the Publicity Chair of the IEEE 23rd ScalCom International Conference. He has published more than 30 papers on computer magazines and international conferences, such as IEEE Trans. on Systems, Man, and Cybernetics: Systems, IEEE Trans. on Computational Social Systems, Advanced Engineering Informatics, and IEEE Systems, Man, and Cybernetics Magazine. Especially, he has published more than 10 papers on E-CARGO.

2. Haibin Zhu, Nipissing University, Canada, email: haibinz@nipissingu.ca

   Haibin Zhu (Fellow, IEEE) is a full professor and the founding director of the Collaborative Systems Laboratory, Nipissing University, Canada, an affiliate full professor of Concordia University and an adjunct professor of Laurentian University, Canada. He received his MS and PhD degrees from National University of Defense Technology, China. He has accomplished over 340+ research works including 70 IEEE Transactions articles, six books, five book chapters, four journal issues, and four conference proceedings. He is a fellow of IEEE and I2CICC, a senior member of ACM, a full member of Sigma Xi, and a life member of CAST-USA.

   He is Vice President, Systems Science and Engineering (SSE) (2023-), member-at-large of the Board of Governors (2022-), a co-chair (2014-) of the technical committee of Distributed Intelligent Systems of IEEE Systems, Man and Cybernetics (SMC) Society (SMCS), and Associate Editor (AE) of IEEE Transactions on SMC: Systems (2018-), IEEE Transactions on Computational Social Systems(2018-), Frontiers of Computer Science (2021-), and IEEE Canada Review (2017-). He was Editor-in-Chief of IEEE SMC Magazine (2022), AE of IEEE SMC Magazine (2018-2021),

Associate Vice President (AVP), SSE (2021), IEEE SMCS, Conference or Program (Co-)Chair for 10+ international conferences, and PC member for 130+ academic conferences.

He is the founding researcher of Role-Based Collaboration and the creator of the E-CARGO model. He is the most productive author in "Collaboration" by IEEE Xplore. He has offered 39 keynote speeches for international conferences and 96 invited talks internationally. His research has been sponsored by NSERC, IBM, DNDC, DRDC, and OPIC.

3. Dongning Liu, Guangdong University of Technology, China, email: liudn@gdut.edu.cn

    Dongning Liu (Senior Member, IEEE) is a full professor at Guangdong University of Technology in China (2009-now). He is engaged in education and technology transfer on collaborative computing. Dr. Liu earned a Ph.D. in Logic at Sun Yat-Sen University, Guangzhou, China (2007). He was a postdoctoral fellow in Math at Sun Yat-Sen University (2007-2009). He was a visiting professor at Nipissing University, North Bay, Canada (2015-2016). He has published more than 60 papers on computer magazines and international conferences, such as IEEE Trans. on SMC: Systems, IEEE Trans. on Cybernetics, IEEE Trans. on Automation Science and Engineering, IEEE Trans. on Computational Social Systems. He is a member of IEEE SMC Society & serving as TC member of the technical committee of Distributed Intelligent Systems, a senior member of CCF Society, and serving as a standing committee member of Technical Committee on Cooperative Computing of China Computer Federation.

4. Hua Ma, Hunan Normal University, China, email: huama@hunnu.edu.cn

    Hua Ma (Senior Member, IEEE) is a full professor of the Hunan Normal University in China. He is engaged in personalized learning and services computing. He received his B.S. degree in computer science and technology, M.S. degree in computer application technology and Ph.D. degree in software engineering from Central South University, Changsha, China in 2003, in 2006, and in 2016, respectively. He has published more than 50 papers on computer magazines and international conferences, such as IEEE Trans. on Parallel and Distributed Systems, IEEE Trans. on Systems Man Cybernetics: Systems, IEEE Trans. on Learning Technologies, IEEE Trans. on Computational Social Systems. He is a member of the Young Editorial Board of Journal of Frontiers of Computer Science & Technology. He is a senior Member of the China Computer Federation (CCF).

5. Yin Sheng, Hohai University, China, email: shengyin@hhu.edu.cn

    Yin Sheng is an associate Professor at Hohai University. He received the B.S. degree in automation from Nanjing University, Nanjing, in 2009, and Ph.D. degree in management science and engineering in 2015. He was a postgraduate student in control science and engineering at Nanjing University from 2009 to 2011. From 2013 to 2014, he was a Research Assistant with Collaborative Systems Laboratory Nipissing University, North Bay, ON, Canada. He has published 11 E-CARGO related papers including two IEEE Trans. journal papers. His current research interests include role-based collaboration, knowledge graphs, and intelligent systems. He was a recipient of the Best Student Paper Award from the 2014 IEEE 11th International Conference on Networking, Sensing and Control held in Miami, FL., USA.

Request for information

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Topics of interest

This special issue aims to explore a wide range of interdisciplinary topics related to the intersection of human interaction, technology, and artificial intelligence. It focuses on recent advancements in fields such as social network dynamics, social intelligence, affective computing, and human-machine collaboration systems. The issue will highlight both theoretical and practical developments, with an emphasis on technologies that have the potential for real-world applications and far-reaching societal impact. Researchers from both academia and industry are encouraged to contribute their latest findings, particularly those that push the boundaries of current knowledge and offer innovative solutions for future challenges in these rapidly evolving fields (including but not limited to):

- Adaptive Collaboration

- Agent Collection/Categorization

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- Agent Evaluation

- Agent Relations

- Complex System Modelling

- Collaboration Methodology and Theory

- Cooperation, Coordination, and Competition

- Dynamic Assignment

- E-CARGO and Game Theory

- E-CARGO Model Extension and Revision

- GRA+ with Multiple Objectives (GRA++)

- Group Performance Evaluation

- Group Role Assignment with Constraints (GRA+)

- Model-Based Systems Engineering

- Role Assignment

- Role Mining

- Role Negotiation

- Role Playing Strategy

- Role Relations

- Role Specification

- Role Transfer

- Role-Based Collaboration (RBC)

- Team/Collective Intelligence

- AI Tools' Applications in E-CARGO/RBC

- E-CARGO's application in real-world scenarios

Important dates

- Manuscript submissions due   (15 November 2025)
- First round of reviews completed   (31 December 2025)
- Revised manuscripts due   (31 January 2026)
- Second round of reviews completed   (15 March 2026)
- Final manuscripts due   (15 April 2026)