



# Giuseppe Manco

Date of birth:

Istituto di Calcolo e Reti ad Alte Prestazioni, Via Bucci 8/9C, 87036, Arcavacata di Rende, Italy

## WORK EXPERIENCE

16/02/2020 - CURRENT - Rende, Italy

**DIRECTOR OF RESEARCH** - CONSIGLIO NAZIONALE DELLE RICERCHE, ISTITUTO DI CALCOLO E RETI AD ALTE PRESTAZIONI

Expert on data science, data analytics and enabling technologies for data analytics. Studying User Profiling and Behavioral Modeling, Social Network Analysis, Recommendation, Information Propagation and Diffusion, Deep Learning. Interested in new frontiers of Computer Science and Technology aimed at analyzing Complex Big Data. •Scientific coordinator of the research group BMSA: Behavioral Modeling and Scalable Analytics". The group comprises 11 researchers and conducts research in the area of Behavior Computing, Data Mining and Analytics.

31/12/2009 - 15/02/2020 - Rende, Italy

**SENIOR RESEARCHER** - CONSIGLIO NAZIONALE DELLE RICERCHE, ISTITUTO DI CALCOLO E RETI AD ALTE PRESTAZIONI

- Scientific coordinator of the research group ADALab: Laboratory of Advanced Analytics on Complex Data". The lab comprises 19 researchers and conducts research in the area of Behavior Computing, Data Mining and Analytics.

31/01/2001 - 30/12/2009 - Rende, Italy

**RESEARCHER** - CONSIGLIO NAZIONALE DELLE RICERCHE

Scientific coordinator of the research group ESTRADA: Enabling Security through Intelligent Data Analysis within the National Research Council (2007-2015).

2000 - CURRENT - Rende, Italy

**ADJUNCT PROFESSOR** - UNIVERSITY OF CALABRIA

Adjunct professor, University of Calabria (2019-2022, "Computer Vision", Dept of Engineering; 2017-2018-2020, "Deep Learning and Statistical Learning", reserved to PhD students of the Dept of Engineering; 2012-2018, "Social Network Analysis and Graph Mining", Dept of Engineering; 2004-2011, "Data Mining and Knowledge Discovery", Dept of Engineering; 2006-2012, "Data Mining", Dept of Mathematics; 2002-2005, Introduction to Computer Science; 2003-2006, Applied Computer Science; 2001, Data Bases and Information Systems; 2002-2007, Foundations of Computer Science).

31/08/2020 - 27/02/2022 - Rende, Italy

**CONSULTANT** - UNIVERSITY OF CALABRIA

Scientific advisor at University of Calabria/DLV System S.r.l. for the adoption of Deep learning techniques for image/time series analysis and manipulation aimed at predictive maintenance within industrial scenarios (electronics, textile) involving small-medium firms within the technological district of Bergamo

2017 – 2020 – Rende, Italy

**CONSULTANT – REVELIS S.R.L.**

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Scientific consultant with Sibelco (2018-2020) for the predictive analysis of clay quality (shrinkage, permeability, strength) on the basis of physical properties and particle characteristics. The analysis was focused on disclosing the correlation on the basis of the results of labor tests.

2015 – 2017 – Rende, Italy

**CONSULTANT – O.K.T. S.R.L.**

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Scientific advisor at NTT Data (2016-2018) for the development of the “AdvisorEngine” software platform, aimed at delivering personalized recommendation based on Deep Neural Networks and entity embedding. The deep learning architecture combines both content features and behavioral features, implements a paradigm of recommendation based on the context where the user is supposed to receive support.

2014 – 2016 – Rende, Italy

**CONSULTANT – EXEURA S.R.L.**

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Scientific advisor at Exeura, (2015-2016) for the development of Big Data Analytics solutions aimed at providing diagnostic and prognostic insights within the available train fleet of Bombardier Transportation.

## EDUCATION AND TRAINING

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31/08/1998 – 31/03/2001

**PHD IN COMPUTER SCIENCE** – University of Pisa

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<http://www.di.unipi.it>

31/10/1989 – 15/12/1994

**LAUREA DEGREE IN COMPUTER SCIENCE** – University of Pisa

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## LANGUAGE SKILLS

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Mother tongue(s):

Other language(s):

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken production	Spoken interaction	
				2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

## PUBLICATIONS

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**Boosting Cyber-Threat Intelligence via Collaborative Intrusion Detection**

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<https://doi.org/10.1016/j.future.2022.04.028> – 2022

Massimo Guarascio, Nunziato Cassavia, Francesco Sergio Pisani, Giuseppe Manco,  
Boosting Cyber-Threat Intelligence via Collaborative Intrusion Detection,  
Future Generation Computer Systems, 2022, ISSN 0167-739X  
<https://doi.org/10.1016/j.future.2022.04.028>

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### **Machine learning methods for generating high dimensional discrete datasets**

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<https://doi.org/10.1002/widm.1450> - 2022

Giuseppe Manco, Ettore Ritacco, Antonino Rullo, Domenico Saccà, Edoardo Serra:  
Machine learning methods for generating high dimensional discrete datasets. WIREs Data Mining Knowl.  
Discov. 12(2) (2022)  
<https://doi.org/10.1002/widm.1450>

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### **A Factorization Approach for Survival Analysis on Diffusion Networks**

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<https://doi.org/10.1109/TKDE.2019.2924369> - 2021

Giuseppe Manco, Ettore Ritacco, Nicola Barbieri:  
A Factorization Approach for Survival Analysis on Diffusion Networks. IEEE Trans. Knowl. Data Eng. 33(1):  
1-13 (2021)  
<https://doi.org/10.1109/TKDE.2019.2924369>

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### **Learning Ideological Embeddings from Information Cascades**

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<https://doi.org/10.1145/3459637.3482444> - 2021

Corrado Monti, Giuseppe Manco, Çigdem Aslay, Francesco Bonchi:  
Learning Ideological Embeddings from Information Cascades. CIKM 2021: 1325-1334  
<https://doi.org/10.1145/3459637.3482444>

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### **Adversarial Regularized Reconstruction for Anomaly Detection and Generation**

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<https://doi.org/10.1109/ICDM51629.2021.00145> - 2021

Angelica Liguori, Giuseppe Manco, Francesco Sergio Pisani, Ettore Ritacco:  
Adversarial Regularized Reconstruction for Anomaly Detection and Generation. ICDM 2021: 1204-1209  
<https://doi.org/10.1109/ICDM51629.2021.00145>

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### **Using an autoencoder in the design of an anomaly detector for smart manufacturing**

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<https://doi.org/10.1016/j.patrec.2020.06.008> - 2020

Antonio L. Alfeo, Mario G. C. A. Cimino, Giuseppe Manco, Ettore Ritacco, Gigliola Vaglini:  
Using an autoencoder in the design of an anomaly detector for smart manufacturing. Pattern Recognit.  
Lett. 136: 272-278 (2020)  
<https://doi.org/10.1016/j.patrec.2020.06.008>

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### **Sequential Variational Autoencoders for Collaborative Filtering**

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<https://doi.org/10.1145/3289600.3291007> - 2019

Naveen Sachdeva, Giuseppe Manco, Ettore Ritacco, Vikram Pudi:  
Sequential Variational Autoencoders for Collaborative Filtering. WSDM 2019: 600-608  
<https://doi.org/10.1145/3289600.3291007>

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### **Outlying property detection with numerical attributes**

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<https://doi.org/10.1007/s10618-016-0458-x> - 2017

Fabrizio Angiulli, Fabio Fassetti, Giuseppe Manco, Luigi Palopoli:  
Outlying property detection with numerical attributes. Data Min. Knowl. Discov. 31(1): 134-163 (2017)  
<https://doi.org/10.1007/s10618-016-0458-x>

## Efficient Methods for Influence-Based Network-Oblivious Community Detection

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<https://doi.org/10.1145/2979682> - 2017

Nicola Barbieri, Francesco Bonchi, Giuseppe Manco:

Efficient Methods for Influence-Based Network-Oblivious Community Detection. ACM Trans. Intell. Syst. Technol. 8(2): 32:1-32:31 (2017)

<https://doi.org/10.1145/2979682>

## Link to DBLP Page with all publications

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<https://dblp.org/pid/m/GiuseppeManco-1.html>

## PROJECTS

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2018 - CURRENT

### **CyberSecurity4Europe**

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A H2020 research-based consortium with 44 participants covering 21 EU Member States with the objective to test and demonstrate potential governance structures for cybersecurity using the best practices examples. Principal Investigator (PI) for ICAR-CNR.

2019 - CURRENT

### **HumaneAI-Net**

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A European-level research project aimed at designing and deploying AI systems that enhance human capabilities and empower both individuals and society as a whole to develop AI that extends rather than replaces human intelligence. PI for ICAR-CNR.

2017 - 2019

### **Collaborative and Confidential Information Sharing and Analysis for Cyber Protection — C3ISP**

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Call H2020-DS-2014-2015/H2020-DS-2015-1, Topic SDS-04-2015: Information driven Cyber Security Management. Grant Agreement n. 700294. ICAR was subcontractor of IIT. Main objective: devising a framework as a service for collaborative e confidential information sharing, analysis and protection.

2018 - 2021

### **SecureOpenNets: Distributed Ledgers for Secure Open Communities**

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PON MIUR Project within the call "Smart, Secure and Inclusive Communities". The research project is aimed at the study and development of distributed ledger methods and models for the protection of data and for privacy, in order to develop collaborative business solutions in smart communities and for digital rights.

2018 - CURRENT

### **True Detective 4.0**

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Italian Ministry of Industry, Call Fondo Crescita Sostenibile -Settori applicativi della Strategia Nazionale di Specializzazione Intelligente relativi a "Fabbrica intelligente", "Agrifood" e "Scienze della vita". The project aims at devising a platform for advanced analytics based on sensor data and capable of enabling smart-factory technologies based on artificial intelligence relative to predictive maintenance, safety and improvement of production processes.

2019 - CURRENT

### **Catch 4.0**

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Italian Ministry of Industry, Call Fondo Crescita Sostenibile -Settori applicativi della Strategia Nazionale di Specializzazione Intelligente relativi a “Fabbrica intelligente”, “Agrifood” e “Scienze della vita”. The project aims at devising techniques, tools and architectures for enabling an advanced analytics platform for customer engagement and satisfaction.

2016 - 2019

### **IDESK - Innovative Digital Environment for Service desk**

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Application of Deep Learning techniques for Natural Language Processing and Understanding aimed at supporting CRM operation in service desk environment. Funded by region Calabria, it includes a collaboration between private organizations (Exeura, InnovaWay) and Research Institutions (CNR).

2016 - 2019

### **PROSiT - Big Data Analytics for Prognostic**

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Application of Deep Reinforcement Learning techniques to the problem of predictive maintenance in the context of sensor streaming data. Funded by region Calabria, it includes a collaboration between a private organization (Exeura), Research Institutions (CNR).

2012 - 2016

### **s3cureDIG.IT - Cybersecurity Technological District**

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Funded by the Italian Ministry of Research, it includes private organizations (Poste Italiane, NTT Data, ICT Sud Consortium), Academic institutions (University of Calabria, University of Reggio Calabria) and Research Institutions (CNR). The focus is on research on big data analytics aimed at cyber- security.

2010 - 2014

### **FRAME - A flexible knowledge-based framework for the management of complex information systems**

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A flexible knowledge-based framework for the management of complex information systems (2011-2014). The project is aimed at building an integrated platform for the analysis of unstructured and multimedia data, based on the adoption of complex data mining techniques.

## CONFERENCES AND SEMINARS

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02/10/2022 - 04/10/2022 - Rende (CS), Italy

### **General Chair, 26th International Symposium on Methodologies for Intelligent Systems**

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ISMIS is an established and prestigious conference for exchanging the latest research results in building intelligent systems. It provides a basis for exchanging research results and transferring scientific achievements towards industrial applications.

<https://ismis2022.icar.cnr.it/>

18/09/2016 - 22/09/2016 - Riva Del Garda, Italy

### **Program Co-Chair, Joint European Conference on Machine Learning and Knowledge Discovery from Data (ECMLPKDD2016)**

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2011 - 2020

### **Program Co-Chair, New Frontiers in Mining Complex Patterns**

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Organizer of the workshop. Related editorial activity:

- Editor, Complex Pattern Mining - New Challenges, Methods and Applications. Studies in Computational Intelligence 880, Springer 2020, ISBN 978-3-030-36616-2. Editors: Annalisa Appice, Michelangelo Ceci, Corrado Loglisci, Giuseppe Manco, Elio Masciari, Zbigniew W. Ras.
- Editor, New Frontiers in Mining Complex Patterns - 8th International Workshop, NFMCP 2017, Held in Conjunction with ECML-PKDD 2019, Würzburg, Germany, September 16, 2019, Revised Selected Papers. Editors: Corrado Loglisci, Giuseppe Manco, Elio Masciari, Zbigniew W. Ras. Lecture Notes in Computer Science 11948, Springer 2020, ISBN 978-3-030-48860-4
- Editor, New Frontiers in Mining Complex Patterns - 6th International Workshop, NFMCP 2017, Held in Conjunction with ECML-PKDD 2017, Skopje, Macedonia, September 18-22, 2017, Revised Selected Papers. Editors: Annalisa Appice, Corrado Loglisci, Giuseppe Manco, Elio Masciari, Zbigniew W. Ras. Lecture Notes in Computer Science 10785, Springer 2018, ISBN 978-3-319-78679-7
- Editor, New Frontiers in Mining Complex Patterns - Third International Workshop, NFMCP 2015, with ECML-PKDD 2015, Porto, Portugal, September 7, 2015, Revised Selected Papers. Editors: Michelangelo Ceci, Corrado Loglisci, Giuseppe Manco, Elio Masciari, Zbigniew W. Ras. Lecture Notes in Computer Science 9607, Springer 2016, ISBN 978-3-319-39314-8
- Editor, New Frontiers in Mining Complex Patterns - Third International Workshop, NFMCP 2014, Held in Conjunction with ECML-PKDD 2014, Nancy, France, September 19, 2014, Revised Selected Papers. Editors: Annalisa Appice, Michelangelo Ceci, Corrado Loglisci, Giuseppe Manco, Elio Masciari, Zbigniew W. Ras. Lecture Notes in Computer Science 8983, Springer 2015, ISBN 978-3-319-17875-2
- Editor, New Frontiers in Mining Complex Patterns: Second International Workshop, NFMCP 2013, Held in Conjunction with ECML-PKDD 2013, Prague, Czech Republic, September 27, 2013, Revised Selected Papers. Editors: Annalisa Appice, Michelangelo Ceci, Corrado Loglisci, Giuseppe Manco, Elio Masciari, Zbigniew W. Ras. Lecture Notes in Computer Science, Vol. 8399 ISBN: 978-3-319-08407-7
- Editor, New Frontiers in Mining Complex Patterns: First International Workshop, NFMCP 2012, Held in Conjunction with ECML-PKDD 2012, Bristol, UK, September 24, 2012, Revised Selected Papers. Editors: Annalisa Appice, Michelangelo Ceci, Corrado Loglisci, Giuseppe Manco, Elio Masciari, Zbigniew W. Ras. Lecture Notes in Computer Science Vol. 7765 2013 ISBN: 978-3-642-37381-7

## HONOURS AND AWARDS

2014

### **YAHOO FREP – YAHOO**

Recipient of the YAHOO Faculty Research and Engagement Program 2014, concerning machine learning research on social network analysis.

## PATENTS

2018

### **• Systems and methods for providing recommendations and explanations**

Patent Pub No. US10218800B2. Inventors: Giuseppe Manco, Nicola Barbieri, Francesco Bonchi

<https://patents.google.com/patent/US10972559B2/en>

2014

### **System and method for network oblivious community detection.**

Patent Pub No. US 2015/0134402 A1. Inventors: Giuseppe Manco, Nicola Barbieri, Francesco Bonchi

<https://patents.google.com/patent/US20150134402A1/en>

2013

### **Identifying communities within social network based on information propagation data.**

Patent Pub No. US 2014/0337356 A1. Inventors: Giuseppe Manco, Nicola Barbieri, Francesco Bonchi

2012

### **Method and System for Learning Topic based Social Influence in Social Network**

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Defensive publication. IP.COM DISCLOSURE NUMBER: IPCOM000229340D (23/07/2013). In-ventors: Giuseppe Manco, Nicola Barbieri, Francesco Bonchi

<https://priorart.ip.com/ IPCOM/000229340>

### **SPIN-OFF ACTIVITIES**

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2013 - 2018

### **Shareholder of Exeura S.r.l.**

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SExeura is a spin-off company of University of Calabria under the initiative of a number of computer scientists. Exeura has become over time a market company, while maintaining alive its relationship with the research world, whereby generating innovation. This has enabled it to achieve remarkable results in the area of business analytics products and solutions. In particular the candidate was the main architect and designer of Rialto (<http://www.exeura.eu/products/rialto>). Rialto is a Business Analytics platform based on Machine Learning techniques for models induction. It integrates the productivity of desktop tools with the precision and feature richness commonly found on enterprise analytics platforms. Rialto supports the analyst in all phases of the KD process, by providing an advanced interface for the visual construction of data analysis applications. Further, it provides a broad set of capabilities for both descriptive and predictive analyses, performed over data of different types and formats (relational data, texts, time series). Rialto is a scalable

platform enabling large data volumes processing. Solutions created by Rialto can easily be integrated in third-party applications.

### **co-founder of Open Knowledge Technologies S.r.l.**

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(OKT, now part of Relatech Group). The company operates within the TechNest Spin-Off incubator of University of Calabria, and develops solutions for Recommendation, advertising and cybersecurity. Within the company, the candidate has the role of scientific advisor for the themes Data Mining, Recommender Systems, Social Network Analysis.

### **PROFESSIONAL SERVICES**

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2020 - CURRENT

### **Member of the Expert Panel for the evaluation of proposals submitted to National Science Center (NCN, Poland)**

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schemes OPUS 20, SONATA 16 and PRELUDIUM BIS 2 in the Panel ST6 - Computer Science and Informatics. NCN finances basic research in Poland.

2016 - CURRENT

### **Scientific evaluator**

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Scientific evaluator for the Italian ministry of Development (Ministero dello Sviluppo Economico) within the Calls "PON-H2020" and "PON-Grandi Progetti" (2017-2022).

2016

### **Scientific evaluator**

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Member of the Expert Panel for the evaluation of internal research proposals for University of Modena and Reggio Emilia

## **Committee member**

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Committee member of the PhD Program in Computer Engineering at University of Calabria since 2020.

## **Member of the Editorial Board**

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- Springer Machine Learning Journal (MLJ) - ISSN 0885-6125.
- Springer Journal of Intelligent Information Systems (JISS) - ISSN 0925-9902.
- Springer Knowledge and Information Systems (KAIS) - ISSN 0219-1377.

## **PC Member**

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- PC Member, Conference on Uncertainty in Artificial Intelligence (UAI), 2021, 2022.
- Senior PC Member, AAAI Conference on Artificial Intelligence, 2019. PC Member, 2020.
- Program co-chair, Workshop on New Frontiers on Mining Complex Data, 2012, 2013-2015, 2017, 2018-2020.
- PC Area Chair, IEEE International Conference on Data Mining (ICDM), 2008, 2014-2016, 2018.
- PC Member, IEEE International Conference on Data Mining (ICDM), 2010-2013.
- PC Member, International Joint Conference on Artificial Intelligence (IJCAI), 2017-2018, 2019. Senior PC Member, 2020.
- PC Member, SIAM International Conference on Data Mining (2009-2012, 2017, 2019-2020).
- PC Area Chair, Machine Learning and Knowledge Discovery in Databases, European Conference, ECML/PKDD (2018, 2019, 2020, 2021, 2022)
- PC Member, Machine Learning and Knowledge Discovery in Databases, European Conference, ECML/PKDD (2017, 2010-2015, 2008, 2006-2003)
- PC Member, International Conference on Web Intelligence and Intelligent Agent Technology (2005-2008)
- PC Member, Pacific-Asia Conference on Advances in Knowledge Discovery (2009, 2011-2017, 2020-2021)

13/07/2022