

CURRICULUM VITAE

Ioan Salomie, PhD

Professor Emeritus

Computer Science Department

Technical University of Cluj-Napoca, Romania,

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1. STUDIES AND DEGREES

- 1973 – 1978 Student *Facultatea de Automatica, Specialization Computer Science and Engineering, Institutul Politehnic Bucuresti* (5 years study)
- 1978 Degree of Diplomat Engineer in Computer Science and Engineering
- 1989 – 1994 PhD Studies at *Technical University of Cluj-Napoca*
- 1994 PhD in Electrical Engineering, Thesis Title *Contributions to Object Oriented Data Modeling for CAD in Electrical Engineering*

2. PROFESIONAL HISTORY

- 1978 – 1981 Institute for Research and Design in Automation (IPA) Cluj-Napoca
- 1981 – 1983 IEIA Cluj-Napoca, Head of Micro Computer (Telerom-P) Production Division
- 1983 – 1990 Assistant Professor of Computer Science, Technical University of Cluj-Napoca
- 1990 – 1995 Lecturer of Computer Science, Technical University of Cluj-Napoca
- 1992 University of Nottingham, Computer Science Department (EC Tempus – Specialization in Object Oriented Methods)
- 1993 Research Fellow, Computer Science Department, University of Nottingham
- 1995 – 1998 Associate Professor of Computer Science, Technical University of Cluj-Napoca
- 1996 Invited Professor, Loyola University in Maryland, Information Systems and Decision Sciences Department, Baltimore, USA
- 1997 Politecnico di Torino (EC Tempus, Specialization in Distributed Systems)
- 1998 – 2021 Professor of Computer Science, Technical University of Cluj-Napoca
- 1998 University of Hamburg, Computer Science Department (EC Tempus, Development of Computer Science Curricula)
- 2001 - 2004: Invited Professor (teaching and research activities), University of Limerick, Ireland, ECE Department
- 2005 - 2008 External Examiner, University of Limerick, Ireland
- 2005 - 2018 External Examiner for 6 PhD Thesis in Rep. of Ireland and Czech Republic
- 2000 – Present: Adjunct Professor, University of Maryland University Campus
- 2021 – Present: Emeritus Professor, Computer Science Department, Technical University of Cluj-Napoca

3. RESEARCH ACTIVITY

2005 – 2021: Founder and Director of Distributed Systems Research Laboratory (DSRL), Technical University of Cluj-Napoca, <https://dsrl.eu>

2021 – present: Scientific and Technical Advisor of the Distributed Systems Research Laboratory (DSRL)

3.1 Research domains

Large Scale Distributed Systems (Modeling, Simulation, Optimization, Adaptation), Autonomic Computing and Systems, Intelligent Systems, Green Computing and Systems (Energy efficient data centres, Smart grids, Smart cities), Decentralized Systems (Blockchain).

3.2 Research awards

Prize Constantin Budeanu of Romanian Academy for the group of papers (co-author) “*Intelligent Solutions for Energy Efficient Ecosystems*”, 2018

3.3 Publications

Books: 9

Book Chapters: 15

Papers (overall as of March 2024):

- Google Scholar: h-Index: 28, Citations: 3660
- Most cited Paper: [Blockchain based decentralized management of demand response programs in smart energy grids](#), Claudia Pop, Tudor Cioara, Marcel Antal, Ionut Anghel, Ioan Salomie, Massimo Bertoncini (776 citations)
- **Web of Science**: Papers: 142, h-index: 17, Citations: 1193
http://apps.webofknowledge.com/Search.do?product=UA&SID=V2xIJWHIIFmqPraMo4A&search_mode=GeneralSearch&prID=39371605-5ec0-425f-b8d9-52a46a2f201b
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Main publications

Journal Papers and Conference Papers (selected)

- Ioan Salomie, Tudor Cioara, Ionut Anghel, Daniel Moldovan, Georgiana Copil, Pierluigi Plebani - An Energy Aware Context Model for Green IT Service Centers – Int. Conf of Service-Oriented Computing, San Francisco, Lecture Notes in Computer Science, Volume 6568, pp. 169-180, ISBN: 978-3-642-19393-4, 2011
- Marcel Antal, Claudia Pop, Tudor Cioara, Ionut Anghel, Ioan Salomie, Florin Pop - A system of systems approach for data centers optimization and integration into smart energy grids - Elsevier's Future Generation Computer Systems (FGCS), April 2020, ISSN 0167-739X, Impact Factor: 5.768, Q1
- Tudor Cioara, Ionut Anghel, Ioan Salomie, Marcel Antal, Claudia Pop, Massimo Bertoncini, Diego Arnone, Florin Pop - Exploiting data centres energy flexibility in smart cities: Business scenarios - Elsevier's Information Sciences, 2019, ISSN 0020-0255, Impact Factor: 5.524, Q1

- Marcel Antal, Claudia Pop, Teodor Petrican, Andreea Valeria Vesa, Tudor Cioara, Ionut Anghel, Ioan Salomie, Ewa Niewiadomska-Szynkiewicz, MoSiCS: Modeling, simulation and optimization of complex systems—A case study on energy efficient datacenters – Elsevier’s Simulation Modelling Practice and Theory, 2019, ISSN 1569-190X, Impact Factor: 4.2, Q1
- Tudor Cioara, Ionut Anghel, Massimo Bertoncini, Ioan Salomie, Diego Arnone, Marzia Mammina, Terpsi Velivassaki, Marcel Antal - Optimized Flexibility Management enacting Data Centres Participation in Smart Demand Response Programs – Elsevier’s Future Generation Computer Systems, Volume 78, Part 1, January 2018, Pages 330-342. Impact Factor: 4.968, Q1
- Marcel Antal, Andrei-Alexandru Cristea, Victor-Alexandru Padurean, Tudor Cioara, Ionut Anghel, Claudia Antal, Ioan Salomie, Nicolas Saintherant – Heating Homes with Servers: Workload Scheduling for Heat Reuse in Distributed Data Centers, MDPI Sensors 21(8): 2879 (2021), Impact Factor 3.275, Q1
- Marcel Antal, Tudor Cioara, Ionut Anghel, Radoslaw Gorzenski, Radoslaw Januszewski, Ariel Oleksiak, Wojciech Piatek, Claudia Pop, Ioan Salomie and Wojciech Szeliga - Reuse of Data Center Waste Heat in Nearby Neighborhoods: A Neural Networks-Based Prediction Model, Energies 2019, 12(5), 814 IF: 2.702, Q1
- Tudor Cioara, Ionut Anghel, Ioan Salomie, Marcel Antal, Massimo Bertoncini, Diego Arnone, Optimizing the Power Factor of Data Centers Connected to the Smart Grid, 5th International workshop on energy-efficient data centres, E2DC 2016 June 21 Waterloo, Canada
- Massimo Bertoncini, Diego Arnone, Tudor Cioara, Ionut Anghel, Ioan Salomie, Terpsichori Helen Velivassaki, Next Generation Data Centers Business Models Enabling Multi-Resource Integration for Smart City Optimized Energy Efficiency in e-Energy 2015: 247-252
- Marcel Antal, Tudor Cioara, Ionut Anghel, Claudia Antal, Ioan Salomie – Flexibility Management of Data Centers to Provide Energy Services in the Smart Grid, in e-Energy '21: Proceedings of the Twelfth ACM International Conference on Future Energy Systems, June 2021 Pages 443–449
- C. Antal, T. Cioara, M. Antal, V. Mihailescu, D. Mitrea, I. Anghel, I. Salomie, G. Raveduto, M. Bertoncini, V. Croce, T. Bragatto, F. Carere, F. Bellesini - Blockchain based decentralized local energy flexibility market - Elsevier Energy Reports, 2021, Volume 7, Pages 5269-5288, ISSN 2352-484, Q2
- Claudia Pop, Tudor Cioara, Marcel Antal, Ionut Anghel, Ioan Salomie and Massimo Bertoncini - Blockchain Based Decentralized Management of Demand Response Programs in Smart Energy Grids, MDPI Sensors 2018, 18(1), 162, Impact Factor: 3.275, Q1
- C. B. Pop, T. Cioara, I. Anghel, M. Antal, V. R. Chifu, C. Antal, I. Salomie, Review of bio-inspired optimization applications in renewable-powered smart grids: Emerging population-based metaheuristic - Elsevier Energy Reports, 2022, Volume 8, Pages 11769-11798, ISSN 2352-4847, Q2
- Claudia Daniela Antal, Tudor Cioara, Ionut Anghel, Marcel Antal, Ioan Salomie - Distributed Ledger Technology Review and Decentralized Applications Development Guidelines, MDPI Future Internet 13(3): 62 (2021), Impact Factor: 3.64, Q2
- Antal, C.; Cioara, T.; Anghel, I.; Antal, M.; Salomie, I. Distributed Ledger Technology Review and Decentralized Applications Development Guidelines – MDPI Future Internet 2021, 13, 62, Q2
- C. D. Pop, M. Antal, T. Cioara, I. Anghel and I. Salomie, Blockchain and Demand Response: Zero-Knowledge Proofs for Energy Transactions Privacy, MDPI Sensors, 2020, 20, 5678. IF:3.275, Q1

- Pop, C.; Antal, M.; Cioara, T.; Anghel, I.; Salomie, I.; Bertoncini, M. - A Fog Computing Enabled Virtual Power Plant Model for Delivery of Frequency Restoration Reserve Services. *MDPI Sensors* 2019, 19, 4688, IF: 3.275, Q1
- Adel Taweel, Lina Barakat, Simon Miles, Tudor Cioara, Ionut Anghel, Abdel-Rahman H. Tawil, Ioan Salomie - A service-based system for malnutrition prevention and self-management, in *Computer Standards & Interfaces*, 2016. IF: 2.809 Q1
- Tudor Cioara, Ionut Anghel, Ioan Salomie, Lina Barakat, Simon Miles, Dianne Reidlinger, Adel Taweel, Ciprian Dobre, Florin Pop, Expert system for nutrition care process of older adults – *Elsevier Future Generation Computer Systems*, Volume 80, March 2018, Pages 368-383, ISSN 0167-739X. IF:6.125 Q1
- I. Salomie, V. R. Chifu, C. B. Pop, Hybridization of Cuckoo Search and Firefly Algorithms for Selecting the Optimal Solution in Semantic Web Service Composition, book chapter in *Cuckoo Search and Firefly Algorithm: Theory and Applications*, Volume 516, 2014, pp 217-243, Springer.
- I. Salomie, V. R. Chifu, I. Harsa, M. Gherga, Web service composition using fluent calculus, *International Journal of Metadata, Semantics and Ontologies*, vol. 5, issue 3, pp. 238-250, 2010,
- Marcel Antal, Claudia Pop, Tudor Cioara, Ionut Anghel, Ioan Salomie, Florin Pop - A system of systems approach for data centers optimization and integration into smart energy grids, *Elseviers Future Generation Computer Systems*, April 2020, ISSN 0167-739X, Impact Factor: 5.768
- Tudor Cioara, Ionut Anghel, Ioan Salomie, Marcel Antal, Claudia Pop, Massimo Bertoncini, Diego Arnone, Florin Pop - Exploiting data centres energy flexibility in smart cities: Business scenarios, *Elseviers Information Sciences*, 2019, ISSN 0020-0255, Impact Factor: 5.524
- Marcel Antal, Claudia Pop, Teodor Petrican, Andreea Valeria Vesa, Tudor Cioara, Ionut Anghel, Ioan Salomie, Ewa Niewiadomska-Szynkiewicz, MoSiCS: Modeling, simulation and optimization of complex systems–A case study on energy efficient datacenters - *Simulation Modelling Practice and Theory*, 2019, ISSN 1569-190X, Impact Factor: 2.426
- Tudor Cioara, Ionut Anghel, Ioan Salomie, Lina Barakat, Simon Miles, Dianne Reidlinger, Adel Taweel, Ciprian Dobre, Florin Pop - Expert system for nutrition care process of older adults, *Future Generation Computer Systems*, Volume 80, March 2018, pp. 368-383, ISSN 0167-739X. Impact Factor: 4.968
- Tudor Cioara, Ionut Anghel, Massimo Bertoncini, Ioan Salomie, Diego Arnone, Marzia Mammina, Terpsi Velivassaki, Marcel Antal - Optimized Flexibility Management enacting Data Centres Participation in Smart Demand Response Programs, *Future Generation Computer Systems*, Volume 78, Part 1, January 2018, Pages 330-342. Impact Factor: 4.968
- Adel Taweel, Lina Barakat, Simon Miles, Tudor Cioara, Ionut Anghel, Abdel-Rahman H. Tawil, Ioan Salomie, A service-based system for malnutrition prevention and self-management, in *Computer Standards & Interfaces*, 2016. Impact Factor: 1.479
- Claudia Daniela Antal, Tudor Cioara, Ionut Anghel, Marcel Antal, Ioan Salomie - Distributed Ledger Technology Review and Decentralized Applications Development Guidelines, *Future Internet* 13(3): 62 (2021), Impact Factor: 3.64
- Marcel Antal, Andrei-Alexandru Cristea, Victor-Alexandru Padurean, Tudor Cioara, Ionut Anghel, Claudia Antal, Ioan Salomie, Nicolas Saintherant – Heating Homes with Servers: Workload Scheduling for Heat Reuse in Distributed Data Centers, *MDPI Sensors* 21(8): 2879 (2021), Impact Factor 3.275

- Marcel Antal, Tudor Cioara, Ionut Anghel, Claudia Antal, Ioan Salomie – Flexibility Management of Data Centers to Provide Energy Services in the Smart Grid, e-Energy '21: Proceedings of the Twelfth ACM International Conference on Future Energy Systems, June 2021 Pages 443–449
- Claudia Pop, Tudor Cioara, Marcel Antal, Ionut Anghel, Ioan Salomie and Massimo Bertoncini, Blockchain Based Decentralized Management of Demand Response Programs in Smart Energy Grids, MDPI Sensors 2018, 18(1), 162, Impact Factor: 2.475

Books

- Ioan Salomie –Tehnici Orientate pe Obiecte (Object Oriented Techniques), MicroInformatica Albastra Publishing House, PC Series 41, 1995, 362 pages, ISBN 973-9215-05-X.
- Ioan Salomie, Tudor Cioara, Ionut Anghel, Tudor Salomie, Distributed Computing and Systems, MicroInformatica Albastra Publishing House, PV Series 230, 367 pages, 2008, ISBN 978-973-650-234-7
- Marcel Antal, Ioan Salomie – *Data Centres as Complex Energy Systems Integrated in Local Smart Grids*, UTPress, 2019
- Claudia Daniela Antal, Ioan Salomie – *Blockchain-based Decentralized Technologies for IoT Systems, Asset Markets and Smart Grids*, UTPress, 2020

3.4 Activity in Research and Development Grants (last 7 years)

- **Horizon Hedge-IoT** HORIZON Europe - CL5-2023-D3-01-15): Holistic Approach towards Empowerment of the Digitalization of the Energy Ecosystem through adoption of IoT solutions 2023-2026
- **Horizon Dedalus** (HORIZON Europe - CL5-2022-D4-01): Data-driven Residential Energy Carrier-agnostic Demand Response Tools and Multi-value Services 2023-2026
- **H2020 – AAL Active and Assisted Living Programme – Engage (2021 – 2024)** - Managing cognitive decline through theatre therapy, artificial intelligence and social robots driven interventions, <https://engage-aal-project.eu>
- **H2020 (Research and Innovation Action) – BRIGHT (2020-2023)** - Boosting DR through increased community-level consumer engagement by combining Data-driven and blockchain technology Tools with social science approaches and multi-value service design (H2020 LC-SC3-EC-3-2020) <https://www.brightproject.eu>
- **H2020 AAL Active and Assisted Living Programme 2019 – RemeberMe (2020 – 2023)** Smart assistant to prevent and detect cognitive decline, promote cognitive function and social inclusion among older adults, <https://www.rememberme-aal.eu>
- **H2020 AAL Active and Assisted Living Programme 2019 – H2HCare (2020 – 2023)** Social robot-based solution for elders' Care management and coaching after discharge from Hospital to Home, <https://h2hcare-aal.eu>

- **H 2020 (Research and Innovation Action) - EDREAM (2017 – 2020)** - Enabling new Demand Response Advanced, Market oriented and secure technologies, solutions and business models 2018-2021 (H2020 LCE-01-2017) <https://edream-h2020.eu/>
- **H 2020 AAL Active and Assisted Living Programme 2016 – REMIND** Robotic e-Partner for Multitarget Innovative activation of people with Dementia 2018 – 2022, <https://zorabots.wixsite.com/remind>
- **H 2020 CATALYST** - Converting DCs in Energy Flexibility Ecosystems 2017-2020 (H2020-EE-2016-2017) <http://project-catalyst.eu/>
- **H 2020 AAL Active and Assisted Living Programme 2016 - MEDGUIDE**, ICT Integrated System for Coordinated Polypharmacy Management in Dementia Patients 2017-2019, <http://medguide-aal.eu/>
- **FP7 (Research and Innovation Action) - GEYSER** - Green Networked Data Centres as Energy Prosumers in Smart City Environments, (Data Centres in an energy-efficient and environmentally friendly Internet FP7-ICT-2013.6.2), <http://www.geyser-project.eu/> **Project Director and Scientific Project Coordinator**
- **FP7 GAMES** – Green Active Management of Energy in IT Service Centres (FP7-ICT-2009-6.3: ICT for Energy efficiency), <http://www.green-datacenters.eu/> **Project Director**
- **FP7 (Ambient Assisted Living (AAL)) - DIET4ELDERS** - Dynamic Nutrition Behaviour Awareness System for the Elders (2013- 2016) (Call 5), <http://www.diet4elders.eu/en> **Project Director**
- **FP7 ELDERS-UP!** - Adaptive system for enabling the elderly collaborative knowledge transference to small companies (2014-2016) (Call 6), <http://www.eldersup-aal.eu/> **Project Director**
- **International research contract: DSRL – Montran Labs, New York** – Blockchain-based decentralized systems technology and services for electronic registration, transacting and processing of assets, 2016-2019, **Project Director**
- **PN3 Bridge Grant ECO2CLOUD** - Energy Efficient Management and Planning Technologies of Cloud Resources for Alpis Brinel Data Center in Cluj-Napoca (Tehnologii de Management si Planificare Eficienta Energetic a Resurselor in Cloud in Centrul de Date Alpis Brinel Cluj-Napoca, 2016 – 2018, **Project Director**
- **PN3 Bridge Grant OPTIPLAN** – Technologies for digitalization, analysis and optimization of production flows at Emerson Cluj-Napoca (Tehnologii pentru digitalizarea, analiza si optimizarea fluxurilor de productie la Fabrica Emerson Cluj-Napoca), (2016 – 2018)
- **Research contract with Industry:** Neural Networks for Machine Learning in Big-Data, Beneficiary SIEMENS RO, Cod 10848/2016, **Project Director**
- **ICT COST Action IC1406 CHIPSET** - High-Performance Modelling and Simulation for Big Data Applications, MC, **Project Director**

- ICT COST Action **IC1303 AAPELE** - Algorithms, Architectures and Platforms for Enhanced Living Environments
- ICT COST Action **CA15140 ImAppNIO** - Improving Applicability of Nature-Inspired Optimisation by Joining Theory and Practice(2016 – 2020)
- **ARHINET** - Integrated System for developing semantically-enhanced archive content RO CNMP Program 4 (2007 – 2010) **Project Director**
- **FOODTRACE** - Integrated IT system for assuring traceability and quality control in food industry RO CEEX (2006 - 2008) **Project Director**
- **MAESTRO** - Ontology Driven Automatic Web Service Composition (RO CNCSIS PN II Idei) (2007-2010) **Project Director**
- **SCANURGENT** - Minimal invasion techniques for screening, prophylaxis and malformation correction of children genitourinary system (2006 – 2008) - Funded by Romanian CEEX Viasan Program 154 / 2006 **Project Director**
- **INTELPRO** – Intelligent system for assisting therapeutic decisions for prostate cancer patients (2005 – 2008) - Funded by Romanian CEEX ViaSan Program 18/2005 **Project Director**

4.6 PC Member and Journal Reviewer

PC Member

2020 – 2023 ICCP

2019: CSCS22

2018: IDC, EUC, ICCP, CSE

2017: SYNASC, ICCP, CSCS21, ISPDC

2016: INISTA, WETICE

2015: BCI, ICCP, ICGREEN, IDC

2014: IDC, KSEM, MCIS, WETICE/Web2Touch14

2013: ICCCI, IDC, ICCP, W2T, ECSCW/Web2Touch

2012: IDC, ICCP, LNCSVRED2012

2011: greenICCP2011 (Chair), FedCSIS2011, IDC 2011, IDC-CCPE-2010, ISPDC 2011

2010: IDC 2010, ICCP10, SEE 2010, SYNASC2010

2009: VLDB/RED 2009, ICCP09, etc.

Paper Evaluations for Journals like Transactions on Cloud Computing (IEEE), Future Generation Computing Systems (Elsevier), Transaction on Evolutionary Computing (IEEE), Simulation Modelling Practice and Theory (Elsevier)

3.5 PhD Thesis

- Supervised PhD Thesis (completed): 12
- Member of Thesis Evaluation Board in Romania: 40+
- External Examiner for PhD Thesis in Republic of Ireland and Czech Rep: 6

4 TEACHING ACTIVITY

Courses (designed and taught) for the Technical University of Cluj-Napoca, Computer Science Department (since 2000)

- *Distributed Systems* for Bachelor in Computer Science programme (Romanian and English Track)
- *Programming Techniques* for Bachelor in Computer Science programme (Romanian and English Track)
- *Advanced Topics in Distributed Systems* for Master in Computer Science programme
- *Service Oriented Distributed Computing* for Master in Computer Science programme
- *Business Process Modelling*, for Master in Computer Science programme

Courses (designed and taught) for the University of Limerick, Electronic and Computer Engineering Department (2001 – 2004)

- *EE6502 Distributed Systems* for Master in Computer Engineering and Communication
- *CE 4706 – Software Engineering I*, for BEng in Computer Engineering

Course (designed and taught) for Loyola University in Maryland, Information Systems and Decision Sciences Department, 1996

- *Object Oriented Programming*

Courses (taught) for University of Maryland University Campus

- *CMSC 215 Intermediate Programming*
- *CMSC 315 Data Structures and Analysis*

5 FOREIGN LANGUAGES

- English – Fluent

6. SERVICES TO THE ACADEMIC COMMUNITY

- ASTR - Associate Member of Romanian Academy of Technical Sciences
- CNATDCU – Member of the selection committee for CNATDCU Section Computer Science (2020 – 2024)
- CNATDCU – Member of Computer Science Section (2012 – 2016)
- Coordinator of Computer Science Doctorate School at Technical University of Cluj-Napoca (2016-2020)
- Member of the Senate of the Technical University of Cluj-Napoca (2012 – 2020)
- Member of the Executive Board of Computer Science Department, Technical University of Cluj-Napoca (2012-2020)

Professor Ioan Salomie
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Cluj-Napoca, March 2025