Curriculum Vitae

Name: Gabriel Ciobanu
Born: 5th July 1957, Piatra Neamț.
Education: A.I. Cuza University of Iaşi, Faculty of Mathematics, 1976-1981.
PhD: A.I. Cuza University of Iaşi, 1990-1994.
Affiliation: A.I.Cuza University and Romanian Academy, Iaşi, Romania
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Positions (date, position, institution) + visits longer than 3 months

- 2018-present senior researcher, A.I.Cuza University, Faculty of Computer Science
- 2001-present senior researcher, IIT, Romanian Academy (Iaşi branch)
- 2006-present editor-in-chief Scientific Annals of Computer Science www.info.uaic.ro/Annals
- 2006-2008 professor, A.I.Cuza University of Iaşi, Romania
- 2010-2015 visiting professor at Newcastle University, UK
- 2011 Apr-Jun visiting professor, University of Cagliari, Italy
- 2000-2004 research fellow, National University of Singapore
- 1995-1996 JSPS fellow/researcher, Tohoku University, Japan
- 1994 DAAD Fellowship, Institute of Computer Science, University of Kiel, Germany
- 1991-1992 Royal Society London research fellow, Edinburgh University, UK
- 1991-2001 assistent and associate professor, A.I.Cuza University, Iaşi
- 1983-1990 researcher, Computing Center, A.I.Cuza University, Iaşi

Fields of research/expertise:

Natural Computing (Membrane Systems):

- introducing several systems of mobile membranes, emphasizing the computational power of endocytosis and exocytosis and their efficiency in solving NP-complete problems;
- distributed algorithms over membrane systems, and links to evolutionary algorithms;
- causality and reversing computation in membrane systems and intensive parallel systems;
- defining the formal semantics for membrane systems, implementing membranes on clusters;
- using membranes to describe various biological processes (e.g., the sodium-potassium pump, immune system).

Distributed Systems (Process Calculi):

- semantics, behavioural equivalences, logics, verification
- introducing and studying timed distributed pi-calculus and TiMo (Timed Mobility);
- mobile ambients with timers modelling network protocols and distributed systems;
- encoding mobile ambients into the pi-calculus and into membrane computing;
- faithful pi-nets for asynchronous pi-calculus and jc-nets; metric semantics with continuations for concurrency.

Bridging membrane computing and process calculi

- encoding both mobile ambients and brane calculi into mobile membranes;
- encoding mobile membranes into coloured Petri nets (verifying systems by using CPN tools);

- extending some notions from process calculi to membrane systems.

Foundations of Mathematics and Computer Science: Finitely Supported Mathematics

- a new set theory in which any infinite structure has a finite support (expressed by permutation invariance) starting from the Fraenkel-Mostowski permutative model of Zermelo-Fraenkel set theory with atoms;
- connections to the logical notions of A.Tarski, Erlangen program of F.Klein, admissible sets and Gandy machines;
- inconsistency of choice axiom and other choice principles in Finitely Supported Mathematics
- finitely supported partially ordered sets, lattices and Galois connections, new fixed point, calculability and approximation properties.

Honours and Awards:

- 2018 - premiu Ad Astra (http://premii.ad-astra.ro/?p=526)
- 2017 - member of Academia Europaea (The Academy of Europe) https://www.ae-info.org
- 2017 - Fundamenta Informaticae Special Issue on the occasion of the 60th Birthday
- 2006-present editor-in-Chief of Scientific Annals of Computer Science
- 2010-2013 member of the National Research Council (CNCS)
- 2008-2010 Royal Society of London Joint Int'l Project (Newcastle University)
- 2013 Grigore Moisil Award (for "Mobility in Process Calculi and Natural Computing")
- 2004 Octav Mayer Award for Scientific Achievements, Romanian Academy, Iasi branch
- 2000 Grigore Moisil Award (for results in Theoretical Computer Science)
- 1995-1996 Japan Society for the Promotion of Science Fellowship (Tohoku University)
- 1994 DAAD Research Fellowship (Institute of Computer Science, Kiel)
- 1991-1992 Royal Society of London / mentored by Robin Milner (FRS, Turing Award) at University of Edinburgh.

The most cited papers/book (ScholarGoogle):

- G.Ciobanu, Gh.Paun, M.J.Perez-Jimenez (Eds). Applications of Membrane Computing, Natural Computing Series, Springer, 2006 / 462 citations
- G.Ciobanu, L.Pan, Gh.Paun; M.J.Perez-Jimenez. P systems with minimal parallelism. Theoretical Computer Science vol.378: 117-130, 2007 / 141 citations
- G.Ciobanu, G.Wenyuan. P systems running on a cluster of computers. Lecture Notes in Computer Science vol.2933, 123-139, 2004 / 110 citations
- O.Andrei, G.Ciobanu, D.Lucanu. A Rewriting Logic Framework for Operational Semantics of Membrane Systems. Theor.Comp.Sci. vol.373, 163-181, 2007 / 79 citations
- G.Ciobanu, C.Prisacariu. Timers for Distributed Systems. EN Theoretical Computer Science vol.164(3), 81-99, 2006 / 66 citatations
- G.Ciobanu. Distributed Algorithms over Communicating Membrane Systems, Biosystems vol.70 (2), 123-133, 2003 / 61 citations
- D. Besozzi, G. Ciobanu: A P system description of the sodium-potassium pump, Lecture Notes in Computer Science 3365, 210-223, 2005 /49 citations
- G. Ciobanu, C. Juravle: Flexible software architecture and language for mobile agents, Concurrency and Computation: Practice and Experience 24 (6), 559-571, 2012 / 41 citations

Books/monographs published and edited recently at Springer:

- A.Alexandru, G.Ciobanu: Foundations of Finitely Supported Structures. Springer 2020.
- A.Alexandru, G.Ciobanu. Finitely Supported Mathematics. An Introduction. Springer 2016.
- B.Aman, G.Ciobanu. Mobility in Process Calculi and Natural Computing, Springer, 2011.
- G.Ciobanu, D.Mery (Eds). Theoretical Aspects of Computing (ICTAC) Proceedings. Lecture Notes in Computer Science vol.8687, Springer 2014.
- G.Ciobanu, Gh.Paun, M.J.Perez-Jimenez (Eds). Applications of Membrane Computing, Natural Computing Series, Springer, 2006.
- G.Ciobanu, G.Rozenberg (Eds). Modelling in Molecular Biology. Springer 2004.
- G.Ciobanu, Gh.Paun (Eds). Fundamentals of Computation Theory (FCT) Proceedings. Lecture Notes in Computer Science vol.1684, Springer 1999.

Recent articles (last 6-7 years, Q1/Q2 journals/conferences):

- A. Alexandru, G. Ciobanu: Properties of the Atoms in Finitely Supported Structures. Archive for Mathematical Logic 59 (1-2), 229-256 (2020)
- B. Aman, G. Ciobanu: Mobile Membranes. IEEE Access 8: 147439-147450 (2020)
- A. Alexandru, G. Ciobanu: Fixed point results for finitely supported algebraic structures. Fuzzy Sets Syst. 397: 1-27 (2020)
- B. Aman, G. Ciobanu: Spiking Neural P Systems with Astrocytes Producing Calcium. Int. J. Neural Syst. 30(12): 2050066:1-2050066:16 (2020)
- A. Alexandru, G. Ciobanu: Relaxing the Fraenkel-Mostowski Set Theory. J. Multiple Valued Log. Soft Comput. 34(5-6): 499-526 (2020)
- B. Aman, P. Battyányi, G. Ciobanu, G. Vaszil: Local Time Membrane Systems and Time Petri nets. Theoretical Computer Science 805, 175-192 (2020)
- R. Horne, A. Tiu, B. Aman, G. Ciobanu: De Morgan Dual Nominal Quantifiers Modelling Private Names in Non-Commutative Logic. ACM Transactions on Computational Logic 20(4), 22:1-44 (2019)
- B. Aman, G. Ciobanu: Synchronization of rules in membrane computing. J. Membrane Computing 1(4): 233-240 (2019) – the best article award in 2019 from ISMC.
- A. Alexandru, G. Ciobanu: On the Foundations of Finitely Supported Sets. Multiple-Valued Logic and Soft Computing 32(5-6): 541-564 (2019)
- G. Ciobanu, C. Vaideanu: A note on similarity relations between fuzzy attribute-oriented concept lattices. Information Sciences 460-461: 254-263 (2018)
- A. Alexandru, G. Ciobanu: Fuzzy sets within Finitely Supported Mathematics. Fuzzy Sets and Systems 339: 119-133 (2018)
- G. Ciobanu, C. Vaideanu: An efficient method to factorize fuzzy attribute-oriented concept lattices. Fuzzy Sets and Systems 317: 121-132 (2017)
- D. Rusu, G. Ciobanu: Essential and density topologies of continuous domains. Ann. Pure Appl. Logic 167(9): 726-736 (2016)
- G.Ciobanu, R.Horne, V.Sassone. A descriptive type foundation for RDF Schema. J.Log. Algebr. Meth. Program. 85(5): 681-706 (2016)
- B.Aman, G.Ciobanu. Modelling and verification of weighted spiking neural systems. Theor. Comput. Sci. 623: 92-102 (2016)
- R.Horne, A.Tiu, B.Aman, G.Ciobanu. Private Names in Non-Commutative Logic. CONCUR 2016, LNCS Springer (2016)

- G.Ciobanu, M.Koutny. PerTiMo: A Model of Spatial Migration with Safe Access Permissions. Computer J. 58(5): 1041-1060 (2015)
- O.Agrigoroaiei, G.Ciobanu. Rewriting Systems Over Indexed Multisets. Computer J. 57(1): 165-179 (2014)
- G.Ciobanu, G.M.Pinna. Catalytic and communicating Petri nets are Turing complete. Inf. Comput. 239: 55-70 (2014)

Overall: 7 books as author, 8 volumes as editor, several special issues of journals devoted to certain scientific meetings, more than 280 papers published in English (and some other papers published in Romanian, mainly before 1994).

According to Scholar Google, the number of citations is over 3200, with h-index 25.
According to Web of Science, the number of citations is over 1200, with h-index 15.
According to SCOPUS, the number of citations is over 1300, with h-index 17.

Professional experience:

- Editor-in-chief of the Scientific Annals of Computer Science (www.info.uaic.ro/Annals).
- Teaching and doing research in various universities around the world. Currently working as senior researcher at the Romanian Academy Iasi branch, and full professor at Cuza University, Iasi. Recently, researcher at National University of Singapore and visiting professor at Newcastle University (UK).
- Member of the National Council of Research in Romania from 2010 to early 2013.
- Member of the editorial boards of Int'l Journal of Computational Intelligence Research and Computer Science Journal of Moldova. Member of several professional associations.
- PhD supervisor (8 Phd students + a number of master students).
- Collaborators and co-authors from several countries (UK, France, Netherlands, Spain, Italy, Russia, China, Singapore, India).
- Invited speaker at international conferences in Romania, Europe and Asia : SYNASC 2004 si 2005 (IEEE CS), CMC 2005 (Springer), ICCC 2006, ISDA 2006 (IEEE CS), IDC 2007 (Springer), BIC-TA 2008 Adelaide, CMC 2010 Jena (Springer), ICTERI (2014), MFOI (2015 and 2019), VeCOS (2016), Congress of the Romanian Mathematicians (2016 and 2019), etc.
- Guest editor of special issues of several international journals, editor of volumes published by known publishers (Springer, IEEE Computer Society), chair and member of several program committees and boards (FCT 1999, Modelling in Molecular Biology, Singapore 2002; Theory and Applications of P Systems, Timisoara 2005, MeCBIC workshop on Membrane Computing and Biologically Inspired Process Calculi, Iasi (2008), Bologna (2009), Jena (2010), Paris (2011) and Newcastle (2012)).
- Research periods spent at Edinburgh University (1991-1992), Universite de Paris XI (1994), CWI and VU Amsterdam (1994), Tohoku and Kyoto University (1995-1996); Cottbus TU (1996); CSIC-IIIA Barcelona (1997,1998); University of Western Ontario (1998), National University of Singapore (2000-2004), University of Cagliari, Newcastle University.
- Short visits and invited talks given at several universities (Germany, Japan, Spain, Italy, UK).

Useful links:

- https://scholar.google.com/citations?user=Kx1pWGkAAAAJ&hl=en&oi=ao
- https://www.scopus.com/authid/detail.uri?authorId=7003872401
- https://www.researchgate.net/profile/Gabriel_Ciobanu
- http://dblp.org/search/index.php?query=author:Gabriel_Ciobanu: