







PERSONAL INFORMATION

Mihai **Florin** Gabriel **CRACIUN**



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-  +40264 405300  +40736162477
-  mihai.craciun@ubbcluj.ro, craciunf@gmail.com
-  www.cs.ubbcluj.ro/~craciunf
-  Skype: florin.cra

Date of birth 03/08/1973 | Nationality Romanian

WORK EXPERIENCE

May 2020 – April 2024

Vice-dean of Faculty of Mathematics and Computer Science, Babes-Bolyai University

- faculty management (computer science research, relationship with the business environment and civil society, scholarships, student accommodation, student competitions, faculty admission)

April 2014 - present

Business or sector Higher Education

Associate Professor of Computer Science

Department of Computer Science, Faculty of Mathematics and Computer Science, Babes-Bolyai University

- Teaching and Research activity

October 2012 – April 2014

Business or sector Higher Education

Lecturer Professor of Computer Science

Department of Computer Science, Faculty of Mathematics and Computer Science, Babes-Bolyai University

- Teaching and Research activity

September 2011 – October 2012

Business or sector Higher Education

Postdoctoral Research Fellow

Department of Computer Science, Faculty of Mathematics and Computer Science, Babes-Bolyai University, POSDRU Programme 89/1.5/S/60189

- Research activity

August 2009– September 2012

Business or sector Higher Education

Co-founder

Soter System, Cluj-Napoca, Romania

- Company management, software programming, research

February 2010 – August 2010

Business or sector IT company

Senior Research Fellow

Department of Computer Science, School of Computing, National University of Singapore

- Research activity

Business or sector Higher Education

March 2008 – April 2009

Postdoctoral Research Fellow

Department of Computer Science, Durham University, UK

- Research activity

August 2002 – March 2008

Business or sector Higher Education

Research Assistant

Department of Computer Science, School of Computing, National University of Singapore

- Research activity

- February 2001 – February 2002 **Assistant Professor of Computer Science**
Business or sector Higher Education
Department of Computer Science, Faculty of Automation and Computer Science, Technical University of Cluj-Napoca
- Teaching and research activity
- February 1999 – February 2001 **Junior Lecturer of Computer Science**
Business or sector Higher Education
Department of Computer Science, Faculty of Automation and Computer Science, Technical University of Cluj-Napoca
- Teaching and research activity
- October 1996 – February 1999 **Software Engineer**
Business or sector Higher Education
Department of Computer Science, Cluj division, Romanian Railways Company
- Programming, software design
- Business or sector IT industry

EDUCATION AND TRAINING

- June 2022 **Habilitation**
Babes-Bolyai University
Thesis title: "Topics in Program Analysis and Program Verification"
- September 2011 – October 2012 **Postdoctoral Researcher**
Department of Computer Science, Faculty of Mathematics and Computer Science, Babes-Bolyai University, POSDRU Programme 89/1.5/S/60189
- March 2008 – April 2009 **Postdoctoral Researcher**
Department of Computer Science, Durham University, UK
- Main fields: Program verification, Separation Logic
- March 2002 – March 2008 **PhD in Computer Science**
School of Computing, National University of Singapore
PhD Supervisor: Prof. Wei-Ngan CHIN
- Thesis title: "Advanced flow-based type systems for object-oriented languages"
 - Main fields: Type Systems, Programming Languages, Static Analysis, Formal Methods, Compilers, Software Engineering
- October 1997 – July 1998 **Master's Degree in Computer Science**
Department of Computer Science, Faculty of Automation and Computer Science, Technical University of Cluj-Napoca
- Thesis title: "Distributed applications on Internet"
 - Main fields: Distributed Systems, Web programming, Databases
- October 1991 – July 1996 **Bachelor's Degree in Computer Science (Engineer in Computer Science, 5 years)**
Department of Computer Science, Faculty of Automation and Computer Science, Technical University of Cluj-Napoca

September 1987 – June 1991

Baccalaureate Diploma

“Emil Racovita” National College, Cluj-Napoca

- Main fields: Mathematics and Physics

PERSONAL SKILLS

Mother tongue(s) Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	Proficient User C2	Proficient User C2	Proficient User C2	Proficient User C2	Proficient User C2

Communication skills

Capacity to adapt to multicultural environments, obtained by doing my academic studies and having different academic/industry positions/visits in different universities/companies in different countries (Babes-Bolyai University, Romania; Technical University of Cluj, Romania; Romanian Railways Company; Soter Sys; NUS Singapore; MIT, US; Harvard University, US; Durham University UK; Tokyo University, Japan; Berkeley University US; Stanford University US; Cambridge University, UK; Teesside University, UK; Portland University, US; Galois, US)

Organisational / managerial skills

- Starting from May 2020, I am the Vice-Dean of Faculty of Mathematics and Computer Science, Babes-Bolyai University
- During 2009-2012, I (co-founded) managed Soter Sys, an IT company.
- I coordinated multiple research/industry projects.
- I organized several conferences.

Driving licence

Category B

ADDITIONAL INFORMATION

HONOURS AND AWARDS

- 2015 **Award for Research** in Computer Science, Babes-Bolyai University
- 2004 - 2005 **President’s Award**, National University of Singapore
- 2004 – 2005 **Dean’s Award**, School of Computing, National University of Singapore
- 2004 **“Most Rigorous Project” Award** (Postgraduate Category), 8th National Information Technology Awareness Project Competition, National University of Singapore.

RESEARCH ACTIVITY

Summary of Research Interests

My main research interests lie in:

- programming languages,
- formal methods,
- software/system engineering,
- static program analysis,
- type systems,
- automated software verification,
- separation logic,
- secure and dependable software,
- functional programming,
- compilers,
- programming language design,
- formal specification and modelling,
- smart contracts for blockchain.

**Research Funding
(Grants, Fellowships and
Scholarships)
2024-2026****Danube Interreg Project**, Babes-Bolyai University

Title: *"Enhancing capacities for technology transfer, company building and innovations in the field of ICT"*

Value: 120000Euro

Role: **Coordinator**

2019 **Advanced Fellowship** from STAR-UBB Institute, Babes-Bolyai University

2015 **Accenture AISS Grant for Universities**, Babes-Bolyai University

Title: *"Verification of security and privacy of IoT protocols"*,

Value: 22000RON.

Role: **Principal Investigator**.

(I have not signed it due to the inappropriate collaboration conditions)

2011 – 2013 **Individual Research Grant** in the European POSDRU Programme 89/1.5/S/60189, Babes-Bolyai University,

Title: *"Resource Analysis and Verification for Collaborative Systems Running on Smart Mobile Devices"*,

Value: 24000Euro,

Role: **Principal Investigator**.

2009 - 2013 **EPSRC Research Grant**, EP/G042322, Teesside University, Computer Science Department, United Kingdom, Principal Investigator: Prof. Shengchao Qin, <https://www.scedt.tees.ac.uk/s.qin/EP-G042322.html>

Title: *"Inference Mechanisms for a Separation and Numerical Domain"*

Value: 350000Euro

Role: **Senior Researcher Member**

2009 - 2013 **Research Grant**, Singaporean National Agency A*STAR, National University of Singapore, School of Computing, Principal Investigator: Prof. Wei-Ngan Chin, <http://www.comp.nus.edu.sg/~chinwn/tier2.09.pdf>

Title: *"Specification and Verification for Future Programmers"*

Value: 1200000Euro

Role: **Senior Researcher Member**

2009 – 2011 **ERCIM "Alain Bensoussan" Fellowship**

- 2008 – 2012 **EPSRC Research Grant**, EP/E021948/1, Durham University, Computer Science Department, United Kingdom, Principal Investigator: Prof. Shengchao Qin, <https://www.scedt.tees.ac.uk/s.qin/EP-E021948/>
 Title: “Resource Analysis and Verification for Dependable Embedded Software”
 Value: 380000Euro
 Role: **Senior Researcher Member**
- 2008 **Onassis Foundation Financial Support**, University of Crete and Foundation for Research and Technology-Hellas (FORTH)
- 2006 – 2008 **Microsoft Research Grant**, National University of Singapore, School of Computing, <http://loris-7.ddns.comp.nus.edu.sg/~project/region/region%20sscli/index.html>
 Title: “A Scalable Region-Based Memory for SSCLI”
 Value: 150000Euro
 Role: **Co-Principal Investigator** with Prof. Wei-Ngan Chin
- 2006 - 2009 **Research Grant**, Singaporean National Agency A*STAR, National University of Singapore, School of Computing, Principal Investigator: Prof. Wei-Ngan Chin, <https://sites.google.com/site/socnewsletter2011/home/research>
 Title: “A Constructive Approach to Dependable Software”
 Value: 800000Euro
 Role: **Senior Researcher Member**
- 2003 – 2006 **Research Grant**, Singaporean National Agency A*STAR, National University of Singapore, School of Computing, Principal Investigator: Prof. Wei-Ngan Chin, <https://sites.google.com/site/socnewsletter2011/home/research>
 Title: “Verifying Software Safety with Constraint Type System”
 Value: 600000Euro
 Role: **Researcher Member**
- 2002 - 2006 **Research Scholarship**, School of Computing, National University of Singapore
- 2001 **Research Intern Scholarship**, School of Computing, National University of Singapore
- 1999 - 2001 **Research Grant ANSTI**, nr. GR 6113/2000, topic B20, from “Ministerul Tehnologiei si Inovatiei, Agentia ANSTI”, Technical University of Cluj-Napoca, Faculty of Automation and Computer Science, Computer Science Department (Confirmat orin adeverinta Nr.16/12.01.2021 eliberata din arhiva Directiei pentru Managementul Cercetarii, Dezvoltarii si Inovarii, din Universitatea Tehnica din Cluj-Napoca)
 Title: “Modelare si Simulare Agenti Inteligenti pentru Aplicatii pe Internet”,
 Value: 546.600 lei,
 Role: **Principal Investigator**
- 1999 **Tempus Scholarship**, S_JEP 11248-96, Free University of Amsterdam, Netherlands
- 1991 – 1996 **Merit-based Scholarship**, Technical University of Cluj-Napoca, Faculty of Automation and Computer Science, Computer Science Department

Publications <https://scholar.google.ro/citations?user=iDZ6YXsAAAAJ&hl=ro>

Scholar Google Citations Number **350** (December 2024)
 Scholar Google H-Index **9** (December 2024)

Refereed Journal Articles

- 2017
1. Shengchao Qin, Guanhua He, Wei-Ngan Chin, **Florin Craciun**, Mengda He, and Zhong Ming. 2017. Automated specification inference in a combined domain via user-defined predicates, *Science of Computer Programming*, 2017, ISSN 0167-6423, Elsevier, <http://dx.doi.org/10.1016/j.scico.2017.05.007>.
- 2013
2. **Florin Craciun**, Simona Motogna, and Bazil Parv. 2013. Towards a Region-based Calculus for Energy-Aware Programming, *Studia Universitatis Babeş-Bolyai Series Informatica*, 93-101.

- 2010 3. Chenguang Luo, **Florin Craciun**, Shengchao Qin, Guanhua He, Wei-Ngan Chin. 2010. Verifying pointer safety for programs with unknown calls. *Journal of Symbolic Computation*, Volume 45, Issue 11, 2010, Pages 1163-1183, ISSN 0747-7171, <http://dx.doi.org/10.1016/j.jsc.2010.06.003>
- 2006 4. Wei-Ngan Chin, **Florin Craciun**, Siau-Cheng Khoo, and Corneliu Popeea. 2006. A flow-based approach for variant parametric types. In *ACM SIGPLAN Notices*, Volume 41 Issue 10, 273-290, October 2006.
- 2004 5. Wei-Ngan Chin, **Florin Craciun**, Shengchao Qin, and Martin Rinard. 2004. Region inference for an object-oriented language. In *SIGPLAN Notices*, Volume 39, Issue 6, June 2004, 243-254.

Refereed Conference Papers

2024

6. Malanciou Daniel, Nimrod Foldvari, **Florin Craciun**, Optimizing Cold Start Performance in Serverless Computing Environments, SYNASC 2024: 26TH INTERNATIONAL SYMPOSIUM ON SYMBOLIC AND NUMERIC ALGORITHMS FOR SCIENTIFIC COMPUTING, IEEE, 2024.
7. Cotor Andrei, Cantor alexandsdru, Florin Craciun, K-Machinations: Testing and Repairing Machinations Diagrams, 31st International Conference on Systems Engineering ICSEng 2024, Springer Verlag, 2024.

- 2023
8. Andrei Cotor, Alexandru Cantor, and **Florin Craciun**, Towards an Operational Semantics for Executable Graphical Diagrams, under submission.
- 2021
9. Andreea Costea, Wei-Ngan Chin, Shengchao Qin, and **Florin Craciun**. Automated Modular Verification for Race-Free Channels with Implicit and Explicit Synchronization. ArXiv, abs/2109.11802.
- 2018
10. **Florin Craciun**, Wei-Ngan Chin, and Shengchao Qin. Variant Region Types. 2018. In *Proceedings of the 23rd International Conference on Engineering of Complex Computer Systems (ICECCS '18)*. IEEE Computer Society. Melbourne, Australia. 12-14 December 2018. <https://doi.org/10.1109/ICECCS2018.2018.00021>
11. Andreea Costea, Wei-Ngan Chin, Shengchao Qin, and **Florin Craciun**. 2018. Automated Modular Verification for Relaxed Communication Protocols. In *Asian Symposium of Programming Languages and Systems (APLAS'18)*. Wellington, New Zealand, 2-6 December 2018. https://doi.org/10.1007/978-3-030-02768-1_16
12. Zhiwu Xu, Kerong Ren, Shengchao Qin and **Florin Craciun**. 2018. CDGDroid: Android Malware Detection Based on Deep Learning using CFG and DFG. In *20th International Conference on Formal Engineering Methods (ICFEM'18)*. Gold Coast, Australia. 12-16 November 2018. https://doi.org/10.1007/978-3-030-02450-5_11
13. **Florin Craciun** and Gabriel Glodean. 2018. Towards Compiling Region Types into RTSJ-compliant Java Code. In *Symbolic and Numeric Algorithms for Scientific Computing (SYNASC' 18)*. Timisoara, Romania. 20-23 September 2018, pp. 101-108. <https://doi.org/10.1109/SYNASC.2018.00028>
- 2015
14. **Florin Craciun**, Tibor Kiss, and Andreea Costea. 2015. Towards a Session Logic for Communication Protocols. In *Proceedings of the 2015 20th International Conference on Engineering of Complex Computer Systems (ICECCS '15)*. IEEE Computer Society, Washington, DC, USA, 140-149. <http://dx.doi.org/10.1109/ICECCS.2015.33>
15. Tibor Kiss, **Florin Craciun**, and Bazil Parv. 2015. Verification of protocol specifications with Separation Logic. 2015. *2015 IEEE International Conference on Intelligent Computer Communication and Processing (ICCP)*, Cluj-Napoca, 2015, pp. 109-116. doi: 10.1109/ICCP.2015.7312614
16. Tibor Kiss, **Florin Craciun**, and Bazil Parv. 2015. Extending Laris with Session Types: A Case Study in Railway Interlocking, *38th International Convention on Information and Communication Technology, Electronics and Microelectronics, Telecommunications and Information, Mipro 2015*, Opatija, Croatia, 729-735, May 2015.
- 2013
17. Guanhua He, Shengchao Qin, Wei-Ngan Chin, and **Florin Craciun**. 2013. Automated Specification Discovery via User-Defined Predicates, In *Formal Methods and Software Engineering: 15th International Conference on Formal Engineering Methods, ICFEM 2013*, Queenstown, New Zealand, October 29 -- November 1, 2013, Springer Berlin, 397—414, https://doi.org/10.1007/978-3-642-41202-8_26
18. Quang Loc Le, Asankhaya Sharma, **Florin Craciun**, and Wei-Ngan Chin, Towards Complete Specifications with an Error Calculus, 2013. In *Proceedings of NASA Formal Methods: 5th International Symposium, NFM 2013*, Moffett Field, CA, USA, May 14-16, 2013, Springer Berlin Heidelberg, LNCS, volume 7871, 291—306, isbn=978-3-642-38088-4, https://doi.org/10.1007/978-3-642-38088-4_20.
19. Simona Motogna, **Florin Craciun**, and Gabriel Glodean. 2013. fUML Formal Description, *9th International Conference on Applied Mathematics*.
20. Simona Motogna, **Florin Craciun**, Ioan Lazar, and Bazil Parv. 2013. Formal Definition of fUML in K-Framework, *Knowledge Engineering: Principles and Techniques Conference (KEPT 2013)* 41-53.
21. **Florin Craciun**, Simona Motogna, and Ioan Lazar. 2013. Towards Better Testing of fUML Models. In *Proceedings of the 2013 IEEE Sixth International Conference on Software Testing, Verification and Validation (ICST '13)*. IEEE Computer Society, Luxembourg, 485-486. <http://dx.doi.org/10.1109/ICST.2013.67>
- 2012
22. **Florin Craciun**, Advanced Type System for Region-based Memory Management, *Zilele Academice Clujene (ZAC 2012)*, 54-60, May, 2012
- 2011
23. Wei-Ngan Chin, Cristian Gherghina, Răzvan Voicu, Quang Loc Le, **Florin Craciun**, and Shengchao Qin. 2011. A specialization calculus for pruning disjunctive predicates to support verification. In *Proceedings of the 23rd international conference on Computer aided verification (CAV'11)*, Springer-Verlag, 293-309. https://doi.org/10.1007/978-3-642-22110-1_23
24. Milton Frentiu and **Florin Craciun**. 2011. Why must we teach verification and validation to undergraduates. *Knowledge Engineering: Principles and Techniques Conference (KEPT 2011)*, 295-304.

- 2010
25. Shengchao Qin, Chenguang Luo, Guanhua He, **Florin Craciun**, and Wei-Ngan Chin. 2010. Verifying heap-manipulating programs with unknown procedure calls. In *Proceedings of the 12th International conference on Formal engineering methods and software engineering (ICFEM'10)*, Springer-Verlag, Berlin, Heidelberg, 171-187. https://doi.org/10.1007/978-3-642-16901-4_13
- 2009
26. **Florin Craciun**, Wei-Ngan Chin, Guanhua He, and Shengchao Qin. 2009. An Interval- Based Inference of Variant Parametric Types. In *Proceedings of the 18th European Symposium on Programming Languages and Systems: Held as Part of the Joint European Conferences on Theory and Practice of Software, ETAPS 2009 (ESOP '09)*, Springer- Verlag, 112-127. http://dx.doi.org/10.1007/978-3-642-00590-9_9.
27. **Florin Craciun**, Chenguang Luo, Guanhua He, Shengchao Qin and Wei-Ngan Chin, Discovering Specifications for Unknown Procedures - Work in Progress. 2009, *Second International Workshop on Invariant Generation Held as Workshop of the Joint European Conferences on Theory and Practice of Software, ETAPS 2009 (ESOP, CC, FOSSACS), (WING 2009)*, EPiC Series in Computing, volume 1, 76—91, 2010. <http://mtc.epfl.ch/events/WING09/Program.php>
28. Chenguang Luo, **Florin Craciun**, Shengchao Qin, Guanhua He, and Wei-Ngan Chin. 2009. Discovering Specifications for Unknown Procedures with Separation Logic, *Workshop on Verified Software: Theory, Tools, and Experiments (2009)*, September, 2009
- 2008
29. **Florin Craciun**, Shengchao Qin, and Wei-Ngan Chin. 2008. A Formal Soundness Proof of Region-Based Memory Management for Object-Oriented Paradigm. In *Proceedings of the 10th International Conference on Formal Methods and Software Engineering (ICFEM '08)*, Springer-Verlag, 126-146. http://dx.doi.org/10.1007/978-3-540-88194-0_10
30. Alexandru Stefan, **Florin Craciun**, and Wei-Ngan Chin. 2008. A Flow-Sensitive Region Inference for CLI. In *Proceedings of the 6th Asian Symposium on Programming Languages and Systems (APLAS '08)*, Springer-Verlag, 19-35, http://dx.doi.org/10.1007/978-3-540-89330-1_3
- 2007
31. . Alexandru Stefan, **Florin Craciun**, and Wei-Ngan Chin. 2007. Region-based memory for CLI, *Asian Symposium on Programming Languages and Systems (APLAS 2007), Poster Session*, Singapore, December 2007.
- 2006
32. Wei-Ngan Chin, **Florin Craciun**, Siau-Cheng Khoo, and Corneliu Popeea. 2006. A flow- based approach for variant parametric types. In *Proceedings of the 21st annual ACM SIGPLAN conference on Object-oriented programming systems, languages, and applications (OOPSLA '06)*. ACM, USA, 273-290, <http://dx.doi.org/10.1145/1167473.1167498>
33. **Florin Craciun**, Hong Yaw Goh, and Wei-Ngan Chin. 2006. A framework for object-oriented program analyses via Core-Java. In *IEEE International Conference on Intelligent Computer Communication and Processing*. 197- 205. September 2006.
34. **Florin Craciun**, Hong Yaw Goh, Corneliu Popeea, and Wei-Ngan Chin. 2006. Core-Java: An Expression-Oriented Java, *Companion to the ACM SIGPLAN Conference on Object- Oriented Programming, Systems, Languages, and Applications (OOPSLA 2006)*, Portland, Oregon, October 2006.
- 2005
- 35.. **Florin Craciun**, Corneliu Popeea, and Wei-Ngan Chin. 2005. Flow Analysis for Variant Parametric Types in Java, *Asian Symposium on Programming Languages and Systems (APLAS 2005), Poster Session*, Japan, November 2005.
- 2004
36. Wei-Ngan Chin, **Florin Craciun**, Shengchao Qin, and Martin Rinard. 2004. Region inference for an object-oriented language. In *Proceedings of the ACM SIGPLAN 2004 conference on Programming language design and implementation (PLDI '04)*. ACM, USA, 243-254. <http://dx.doi.org/10.1145/996841.996871>
37. **Florin Craciun** and Wei-Ngan Chin, Optimizations in region-based programming. 2004. *Asian Symposium on Programming Languages and Systems (APLAS 2004), Poster Session*, Taiwan, November 2004.
- 2001
- 38.. Ioan Alfred Letia, **Florin Craciun**, and Zoltan Köpe. 2001. Norms for DLP Agents Working in a Warehouse Scenario. In *Proceedings of the 14th International conference on Industrial and engineering applications of artificial intelligence and expert systems: engineering of intelligent systems (IEA/AIE '01)*, Springer-Verlag, UK, 728-733. https://doi.org/10.1007/3-540-45517-5_80

- 2000
39. Ioan Alfred Letia, **Florin Craciun**, and Zoltan Köpe. 2000. Towards Validation of Specifications by Simulation. In *Revised Papers from the International Workshop on Infrastructure for Multi-Agent Systems: Infrastructure for Agents, Multi-Agent Systems, and Scalable Multi-Agent Systems*, Springer-Verlag, LNCS, volume 1887, 293-295. https://doi.org/10.1007/3-540-47772-1_29
 40. Ioan Alfred Letia, **Florin Craciun**, and Zoltan Köpe. 2000. Validating the Behavior of Self-Interested Agents in an Information Market Scenario. In *Proceedings of the Second International Conference on Intelligent Data Engineering and Automated Learning, Data Mining, Financial Engineering, and Intelligent Agents (IDEAL '00)*, Springer-Verlag, UK, 392-397. https://doi.org/10.1007/3-540-44491-2_57
 41. Ioan Alfred Letia, **Florin Craciun**, Zoltan Köpe, and Alexandru Lelutiu. 2000. First Experiments for Mining Sequential Patterns on Distributed Sites with Multi-Agents. In *Proceedings of the Second International Conference on Intelligent Data Engineering and Automated Learning, Data Mining, Financial Engineering, and Intelligent Agents (IDEAL '00)*, Springer-Verlag, London, UK, 187-192. https://doi.org/10.1007/3-540-44491-2_28
 42. Ioan Alfred Letia, **Florin Craciun**, Zoltan Köpe, and Aurel Netin, 2000. Distributed diagnosis by BDI agents, *IASTED International Conference Applied Informatics (AI)*, Innsbruck, Austria, February, 2000, ACTA Press, 862-867.
 43. Ioan Alfred Letia, **Florin Craciun**, and Zoltan Köpe. 2000. Experiments with cooperating, self-interested BDI agents, *International Conference on Technical Informatics (CONTI 2000)*, Timisoara, Romania, October 2000.
 44. Ioan Alfred Letia, **Florin Craciun**, and Zoltan Köpe, 2000. Multi-agents for distributed diagnosis, *International Symposium on System Theory, Automation, Robotics, Computers, Informatics, Electronics, and Instrumentation (SINTES 2000)*, Craiova, Romania, May 2000.

Theses

- 2021
45. **Florin Craciun**, "Topics on Program Analysis and Program Verification", *Habilitation Thesis*, Babes-Bolyai University, 2021.
- 2008
46. **Florin Craciun**, "Advanced Flow-based Type Systems for Object-Oriented Languages", *Ph. D. Thesis*, School of Computing, National University of Singapore, October 2008.
- 1998
47. **Florin Craciun**, "Distributed Applications on Internet", *M.Sc. Thesis*, Computer Science Department, Technical University of Cluj-Napoca, 1998.
- 1996
48. **Florin Craciun**, "An Expert System based on an Uncertainty Network", *B. Sc. Thesis*, Computer Science Department, Technical University of Cluj-Napoca, 1996.

**Talks, Presentations,
Conference Presentations,
Keynote, and Invited speaker**

- 2024 **Conference presentation**, 31st International Conference on Systems Engineering ICSEng 2024, Military University of Technology, Warsaw, Poland
Title: K-Machinations: Testing and Repairing Machinations Diagrams
- 2022 **University Invited Talk**, *Logic Seminar, Bucuresti University*
Host: Prof. Laurentiu Leustean
Title: Region Types for Region-based Memory Management
- 2019 **Invited Speaker**, the third edition of *Working Formal Methods Symposium (FROM)*, September 2019, Timisoara, Romania.
Title: "Region-based memory management for Big Data applications"
<https://from2019.projects.uvt.ro/invited-speakers>
- University Talk**, *STAR-UBB Institute, Babes-Bolyai University*
Title: "Region-based Memory Management in Java"

- 2017 **Invited Speaker**, the first edition of *Working Formal Methods Symposium (FROM)*, July 2017, Bucuresti, Romania.
Title: "Towards a Session Logic for Communication Protocols",
<https://unibuc.ro/~conference/from2017/indexold.html>
- 2013 **Poster Presentation**, *2013 IEEE Sixth International Conference on Software Testing, Verification and Validation (ICST '13)*, March 2013, Luxembourg
Title: "Towards Better Testing of fUML Models"
- 2012 **Conference Presentation**, *Zilele Academice Clujene (ZAC 2012)*, May 2012
Title: "Advanced Type System for Region-based Memory Management"
- 2009 **Conference Presentation**, *European Symposium of Programming (ESOP'09)*, UK, March 2009.
Title: "An Interval-based Inference of Variant Parametric Types".
- 2008 **Conference Presentation**, *International Conference on Formal Methods and Software Engineering (ICFEM 2007)*, Kitakyushu, Japan, October 2008.
Title: "A Formal Soundness Proof of Region-based Memory Management for Object-Oriented Paradigm".
- 2006 **Conference Presentation**, *ACM SIGPLAN Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA 2006)*, Portland, Oregon, October 2006.
Title: "A Flow-based Approach for Variant Parametric Types".
- Poster Presentation**, *ACM SIGPLAN Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA 2006)*, Poster Session, Portland, Oregon, October 2006.
Title: "Core-Java: an expression-oriented Java"
- University Talk**, *School of Computing, National University of Singapore*, October 2006,
Host: Prof. Wei-Ngan Chin
Title: "A Flow-based Approach for Variant Parametric Types".
- Industry Invited Speaker**, *Galois Inc.*, Oregon, October 2006
Title: "A Flow-based Approach for Variant Parametric Types".
- Conference Presentation**, *IEEE 2nd International Conference on Intelligent Computer Communication and Processing (ICCP 2006)*, Cluj-Napoca, Romania, September 2006.
Title: "A Framework for Object-Oriented Program Analyses via Core-Java".
- University Invited Speaker**, *Programatica Group Seminar, Portland State University*, Oregon, October 2006.
Host: Prof. Mark P Jones (<https://web.cecs.pdx.edu/~mpj/>)
Title: "A Flow-based Approach for Variant Parametric Types".
- 2005 **Poster Presentation**, *Asian Symposium on Programming Languages and Systems (APLAS 2005)*, Poster Session, Japan, November 2005.
Title: "Flow Analysis for Variant Parametric Types in Java".
- University Invited Speaker**, *the 20th Tokyo Programming Seminar, Tokyo University*, Japan, April 2005.
Host: Prof. Zhenjiang Hu (<http://sei.pku.edu.cn/~hu/>)
Title: "Region Inference for an Object-Oriented Language".
- University Invited Speaker**, *Graduate School of Informatics, Kyoto University*, Japan, May 2005.
Host: Prof. Atsushi Igarashi (<https://www.fos.kuis.kyoto-u.ac.jp/~igarashi/index.html.en>)
Title: "Region Inference for an Object-Oriented Language".
- 2004 **Poster Presentation**, *Asian Symposium on Programming Languages and Systems (APLAS 2004)*, Poster Session, Taiwan, November 2004.
Title: "Optimizations in Region-based Programming".

National Singaporean Competition Presentation, *National Information Technology Awareness (NITA), Postgraduate Category, School of Computing, National University of Singapore*, March 2004.
Title: "Region Inference for an Object-Oriented Language".

2001 **Conference Presentation**, *Industrial and Engineering Applications of Artificial Intelligence and Expert Systems (IEA/AIE)*, Hungary, June 2001.
Title: "Norms for DLP agents working in a warehouse scenario".

2000 **Conference Presentation**, *IASTED International Conference Applied Informatics*, Austria, February 2000.
Title: "Distributed diagnosis by BDI agents".

Research Visits

August 2024 School of Computing, National University of Singapore, Host: Prof. Wei-Ngan Chin

December 2018 School of Computing, National University of Singapore, Host: Prof. Wei-Ngan Chin

August 2013 School of Computing, National University of Singapore, Host: Prof. Wei-Ngan Chin

September 2012 -November 2012 Teesside University, UK, Host: Prof. Shengchao Qin

February 2010 – August 2010 School of Computing, National University of Singapore, Host: Prof. Wei-Ngan Chin

October 2006 Portland State University, Oregon, US, Host: Prof. Mark P Jones
Berkeley University, California, US, Host: Prof. George Necula
Stanford University, California, US, Host: Prof. Zohar Manna
Galois Inc., Oregon, US, Host: Prof. John Launchbury

April 2005 – May 2005 Tokyo University, Japan, Host: Prof. Zhenjiang Hu
Kyoto University, Japan, Host: Prof. Atsushi Igarashi

June 2004 MIT, US, Host: Prof. Martin Rinard
Harvard University, US, Host: Prof. Gregory Morrisett
Boston University, US, Host: Prof. Hongwei Xi
Vermont University, US, Prof. Christian Skalka

June 1999 – August 1999 Vrije Universiteit Amsterdam, Netherlands, Host: Prof. Gerrit van der Veer

External Research Collaborations

National University of Singapore
Teesside University, UK
Singapore Management University, Singapore
Peking University, China
Nanyang Technological University, Singapore
University of Bucharest, Romania
A.I. Cuza University of Iasi, Romania

Attended Conferences, Workshops, and Summer/Winter Schools

October 2024 31st International Conference on Systems Engineering ICSEng 2024, Warsaw, Poland

July 2022 The 16th Theoretical Aspects of Software Engineering Conference (*TASE 2022*)

May 2021 *Verified software: from theory to practice Workshop*, Isaac Newton Institute, Cambridge, UK

September 2020 *Working Formal Methods Symposium (FROM 2020)*, Cluj-Napoca, Romania

- September 2019 *Working Formal Methods Symposium (FROM2019)*, Timisoara, Romania
- July 2017 *Working Formal Methods Symposium (FROM2017)*, Bucharest, Romania
- March 2013 *IEEE Sixth International Conference on Software Testing, Verification and Validation (ICST '13)*, Luxembourg
- June 2013 *Knowledge Engineering: Principles and Techniques Conference (KEPT 2013)*, Cluj-Napoca, Romania
- May 2012 *Zilele Academice Clujene (ZAC 2012)*, Cluj-Napoca, Romania
- April 2009 *European Symposium of Programming (ESOP'09)*, York, UK

- October 2008 *International Conference on Formal Methods and Software Engineering (ICFEM 2007)*, Kitakyushu, Japan
- June 2008 *Summer School "Embedded networked Systems: Theory and Applications"*, University of Crete and Foundation for Research and Technology-Hellas (FORTH), Greece.
- December 2007 *Asian Symposium on Programming Languages and Systems (APLAS 2007)*, Singapore
- October 2006 *ACM SIGPLAN Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA 2006)*, Portland, Oregon
- September 2006 *IEEE 2nd International Conference on Intelligent Computer Communication and Processing (ICCP 2006)*, Cluj-Napoca, Romania
- November 2005 *Asian Symposium on Programming Languages and Systems (APLAS 2005)*, Tsukuba, Japan
- April 2005 *International Conference on Typed Lambda Calculus and Applications (TLCA 2005)*, Nara, Japan
- November 2004 *Asian Symposium on Programming Languages and Systems (APLAS 2004)*, Taipei, Taiwan
- June 2004 *ACM SIGPLAN 2004 Conference on Programming Language Design and Implementation (PLDI '04)*, Washington DC, US.
- June 2001 *Industrial and Engineering Applications of Artificial Intelligence and Expert Systems (IEA/AIE)*, Budapest, Hungary
- February 2000 *IASTED International Conference Applied Informatics*, Innsbruck, Austria

PROFESIONAL ACTIVITY**Conference Proceedings Editor**

- 2022 16th International Symposium, **TASE 2022**, Cluj-Napoca, Romania, July 8–10, 2022
Proceedings, Editors: Yamine Ait-Ameur and **Florin Craciun**, LNCS 13299, Springer Verlag, ISSN
0302-9743

**Conference Program
Committees**

- 2024 The 28th International Conference on Engineering of Complex Computer Systems
(**ICECCS 2024**)
<https://cyprusconferences.org/iceccs2024/>
- The 25th International Conference on Formal Engineering Methods (**ICFEM2024**)
<https://icfem2024.info/>
- 2023 The 24th International Conference on Formal Engineering Methods (**ICFEM2023**)
<https://formal-analysis.com/icfem/2023/>
- The 17th Theoretical Aspects of Software Engineering Conference (**TASE 2023**)
<https://bristolpl.github.io/tase2023/>
- The 27th International Conference on Engineering of Complex Computer Systems (**ICECCS 2023**)
<https://www.irit.fr/iceccs2023/>
- The sixth edition of Working Formal Methods Symposium (**FROM 2023**)
<https://from2023.cs.unibuc.ro/>
- 2022 **PC Co-Chair**, The 16th Theoretical Aspects of Software Engineering Conference (**TASE 2022**)
<https://www.cs.ubbcluj.ro/tase2022/>
- The Symposium on Dependable Software Engineering: Theories, Tools and Applications (**SETTA 2022**)
<https://easychair.org/cfp/SETTA-22>
- The 23rd International Conference on Formal Engineering Methods (**ICFEM 2022**)
<http://maude.ucm.es/ICFEM22/>
- The 14th Joint Conference on Mathematics and Computer Science (**MACS 2022**)
<https://www.cs.ubbcluj.ro/~macs/2022/>
- The fifth edition of Working Formal Methods Symposium (**FROM 2022**)
<https://project.inria.fr/from22/>
- 2021 The 15th Theoretical Aspects of Software Engineering Conference (**TASE 2021**)
<https://tase2021.github.io/>

- The Symposium on Dependable Software Engineering: Theories, Tools and Applications (**SETTA 2021**)
<https://lcs.ios.ac.cn/setta2021/>
- The fourth edition of Working Formal Methods Symposium (**FROM 2021**)
<https://from2021.cs.unibuc.ro/>
- 2020 **PC Co-Chair**, The third edition of Working Formal Methods Symposium (**FROM 2020**)
<http://www.cs.ubbcluj.ro/from2020/>
- The 22nd International Conference on Formal Engineering Methods (**ICFEM 2020**)
<http://formal-analysis.com/icfem/2020/>
- The 14th International Symposium on Theoretical Aspects of Software Engineering (**TASE 2020**)
<https://sei.ecnu.edu.cn/tase2020/>
- The 13th Joint Conference on Mathematics and Computer Science (**MACS 2020**)
<http://macs2020.elte.hu/>
- 2019 The 21st International Conference on Formal Engineering Methods (**ICFEM 2019**)
<http://csse.szu.edu.cn/icfem2019/committee.html>
- The 13th International Symposium on Theoretical Aspects of Software Engineering (**TASE 2019**)
<http://www.se.gxnu.edu.cn/tase2019/>
- 2018 The second edition of Working Formal Methods Symposium (**FROM 2018**)
<https://fmse.info.uaic.ro/event/from-2018/>
- The 6th International Conference on Mining Intelligence and Knowledge Exploration (**MIKE 2018**)
<http://www.mike.org.in/2018/>
- 2012 The 6th International Symposium on Theoretical Aspects of Software Engineering (**TASE 2012**)
<http://selab.bjut.edu.cn/tase2012>
- The 14th ECOOP Workshop on Formal Techniques for Java-like Programs (**FTfJP 2012**)
<https://lists.cam.ac.uk/pipermail/cl-isabelle-users/2012-February/msg00030.html>
- 2011 The 13th International Conference on Formal Engineering Methods (**ICFEM 2011**)
<http://www.scm.tees.ac.uk/icfem2011>
- 2010 The 8th International Symposium on Automated Technology for Verification and Analysis (**ATVA 2010**)
<http://atva10.comp.nus.edu.sg/>
- 2009 **Poster Chair**, The 3rd International Symposium on Theoretical Aspects of Software Engineering (**TASE 2009**)
<https://www.scedt.tees.ac.uk/s.qin/tase2009/co.htm>

External Reviewer for Conferences

- 2024 30th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (**TACAS 2024**)
<https://etaps.org/2024/conferences/tacas/>
- 2018 International Symposium on Theoretical Aspects of Software Engineering (**TASE 2018**)
- 2012 International Symposium on Formal Methods (**FM 2012**)
 ACM SIGPLAN/SIGBED Conference on Languages, Compilers, Tools and Theory for Embedded Systems (**LCTES 2012**)

- 2010 ACM SIGPLAN Conference on Object-Oriented Programming, Systems, Languages, and Applications (**OOPSLA 2010**)
ACM SIGACT-SIGPLAN Symposium on Principles of Programming Languages (**POPL 2010**)
International Conference on Formal Engineering Methods (**ICFEM 2010**)
- 2009 Partial Evaluation and Program Manipulation (**PEPM 2009**)
Asian Symposium on Programming Languages and Systems (**APLAS 2009**)
- 2008 Partial Evaluation and Program Manipulation (**PEPM 2008**)
International Conference on Formal Engineering Methods (**ICFEM 2008**)
Asian Symposium on Programming Languages and Systems (**APLAS 2008**)
ACM SIGPLAN Conference on Programming Language Design and Implementation (**PLDI 2008**)
- 2007 International Symposium on Theoretical Aspects of Software Engineering (**TASE 2007**)
Generative Programming and Component Engineering (**GPCE 2007**)
Asian Symposium on Programming Languages and Systems (**APLAS 2007**)
- 2006 Static Analysis Symposium (**SAS 2006**)
Asian Symposium on Programming Languages and Systems (**APLAS 2006**)
- 2005 ACM SIGPLAN Conference on Programming Language Design and Implementation (**PLDI 2005**)
Asian Symposium on Programming Languages and Systems (**APLAS 2005**)
- 2004 Asian Symposium on Programming Languages and Systems (**APLAS 2004**)
- 2003 Asian Symposium on Programming Languages and Systems (**APLAS 2003**)

Conferences Organization

- 2022 **General Co-Chair**, The 16th Theoretical Aspects of Software Engineering Conference (**TASE 2022**)
<https://www.cs.ubbcluj.ro/tase2022/>
- 2020 **General Co-Chair**, Working Formal Methods Symposium (**FROM 2020**)
<http://www.cs.ubbcluj.ro/from2020/>
- 2009 **Publicity Chair**, The 3rd International Symposium on Theoretical Aspects of Software Engineering (**TASE 2009**)
<https://www.scedt.tees.ac.uk/s.qin/tase2009/co.htm>
- 2004 **System Admin** (paper submission system and web site), Asian Symposium on Programming Languages and Systems (**APLAS 2004**)

Journal Editor

- 2023-2024 Science of Computer Programming
Special Issue title: Special issue of the 16th international symposium on Theoretical Aspects of Software Engineering

Journal Reviewer

- 2023 Studia Universitatis Babes-Bolyai Series Informatics
- 2022 Studia Universitatis Babes-Bolyai Series Informatics
- 2021 Science of Computer Programming
Journal of Computer Science and Technology
- 2020 Science of Computer Programming
- 2019 Studia Universitatis Babes-Bolyai Series Informatics

- 2018 Studia Universitatis Babes-Bolyai Series Informatics
- 2017 Studia Universitatis Babes-Bolyai Series Informatics
- 2016 Studia Universitatis Babes-Bolyai Series Informatics
- 2015 Studia Universitatis Babes-Bolyai Series Informatics
- 2014 Studia Universitatis Babes-Bolyai Series Informatics
- 2013 Studia Universitatis Babes-Bolyai Series Informatics
- 2012 Studia Universitatis Babes-Bolyai Series Informatics
- 2009 Science of Computer Programming

Service to Babes-Bolyai University

- 2020 – 2024 Vice-dean, Faculty of Mathematics and Computer Science
- 2020 - 2024 Member, Socio-Economic Council of Babes-Bolyai University
- 2017- 2024 Member, Scientific Council of Babes-Bolyai University

Other Professional Services

- 2023-2024 COST Open Call Independent External Expert
- 2022 Evaluator for UEFISCDI Experimental Demonstrative Project competition
- 2021-2025 Management Committee Member for COST Action CA20111- European Research Network on Formal Proofs
- 2017 Member, Committee of Mathematics and Computer Science, Romanian National Council for Scientific Research (CNCS)
- 2006- present Member, Association for Computing Machinery (ACM)
Member, Special Interest Group on Programming Languages (ACM SIGPLAN)
Member, IEEE Computer Society

TEACHING ACTIVITY**Courses at Babes-Bolyai University**

2021 - present	Course coordinator, Undergraduate course, <i>Blockchain: Smart Contracts</i>
2018 - present	Course coordinator, Graduate course, <i>Programming Paradigms</i>
2017 - 2019	Course coordinator, Graduate course, <i>Formal Methods</i>
2015 - 2017	Course coordinator, Undergraduate course, <i>Virtual Machines: Design and Implementation</i>
2015 - present	Course coordinator, Undergraduate course, <i>Advanced Programming Methods</i> , Lab Project: Implementation of a Toy Language Interpreter
2012 - present	Course coordinator, Graduate course, <i>Methodologies for Software Processes</i>

Courses at National University of Singapore

2006	Teaching Assistant, Graduate Course, Advanced Topics in Programming Languages
2005 - 2007	Teaching Assistant, Undergraduate Course, Programming Language Concepts

Courses at Technical University of Cluj-Napoca

1999 - 2000	Teaching Assistant, Graduate Course, Multiagent Systems
	Teaching Assistant, Undergraduate Course, Introduction to Artificial Intelligence
	Teaching Assistant, Undergraduate Course, Artificial Intelligence

Courses at Romanian Railways Company

1998-1999	Lecturer, Introduction into Oracle Database- programming and management
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PhD Students under supervision

2023-2026	Nimrod Folvary Proposed Topic: "Serverless: design and optimization"
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Member Ph.D. Thesis Committees

2017	Gal-Chis Călin Eugen Nicolae, Babes-Bolyai University, Thesis: "Requirements Engineering for Web Applications"
2015	Panduru I Ciprian Ionut, University of Bucharest, Thesis: "Research on Agapia Language, Compiler and Applications"

Member of Doctoral Guidance Committees

2014 - 2017	Kiss Tibor, Babes-Bolyai University and Siemens, Thesis: " Session Logic and its Applications in Railway Industry "
2008 - 2010	Guanhua He, Durham University and Teesside University, UK Chenguang Luo, Durham University, UK