

Curriculum Vitae of Irina B. Virbitskaite

PERSONAL DATA

Position:

- Chief Researcher at the A.P. Ershov Institute of Informatics Systems, Siberian Branch of the Russian Academy of Sciences
- Professor at the Novosibirsk State University

Work address:

A.P. Ershov Institute of Informatics Systems
Siberian Branch of the Russian Academy of Sciences (IIS SB RAS),
6, Acad. Lavrentiev ave., Novosibirsk, 630090, Russia

Office phone: +7 383 330 63 60

Fax: +7 383 332 34 94

E-mail: virb@iis.nsk.su

Internet: <http://www.iis.nsk.su/persons/virb/>

EDUCATION

1973	Finishing school
1973-1978	Studying at the Novosibirsk State Technical University
1986-1989	Post Graduate Course at the Novosibirsk Computing Center

DEGREES

1978	Master's Diploma in Software Engineering, Faculty of Automatic Control Systems, Novosibirsk State Technical University
1990	Grade of Candidate of Physics and Mathematics (analog of Ph.D.) with thesis "Automatic Design of Data Flow Structures" (Supervisor: Professor V.A. Val'kovsky)
1995	Senior Researcher's Diploma in Computer Science
1997	Associate Professor's Diploma in Computer Science
2002	Grade of Doctor of Physics and Mathematics (analog of Habilitation) with thesis "Formal Models and Correctness Analysis of Concurrent and Real-Time Systems"
2009	Full Professor's Diploma in Computer Science

EMPLOYMENT

Main Job:

1978-1986	Minor Researcher at the Novosibirsk State University
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1990-1992 Researcher at the Institute of Informatics Systems SB RAS
1993-2002 Senior Researcher at the Institute of Informatics Systems SB RAS
2002-2010 Leading Researcher at the Institute of Informatics Systems SB RAS
2010-until now Chief Researcher at the Institute of Informatics Systems SB RAS

Second Job:

1991-2003 Associate Professor at the Novosibirsk State University
April-September, 1994 Guest Lecturer at the University of Hildesheim (Germany)
2003- until now Professor at the Novosibirsk State University

TEACHING EXPERIENCE

Courses at Novosibirsk State University:

- Concurrency Theory
- Introduction to Parallel Programming

Former Ph.D. Students:

- Igor V. Tarasyuk (December 1997). Ph.D. thesis “Equivalence Notions for Models of Concurrent and Distributed Systems”.
- Anzhelika V. Votintseva (December 1997). Ph.D. thesis “Specification and Verification Methods of Concurrent Processes Represented by Event Structures”.
- Katerina Pokozy (June 1999). Ph.D. thesis “Specification and Verification Methods of Concurrent Models with Dense Time”.
- Elena N. Bozhenkova (June 2000). Ph.D. thesis “Behaviour Analysis of Concurrent and Real-Time Processes Represented by Timed Event Structures Models”.
- Natalya Gribivskaya (December 2004). Ph.D. thesis “Category-Theoretic Investigation of Behavioural Equivalences of Real-Time Models”.
- Roman Dubtsov (December 2008). Ph.D. thesis “Category-Theoretic Observation of Scott Domain Semantics of Concurrent and Real-Time Models”.

RESEARCH INTERESTS

- Concurrency Theory
- Program and System Construction for Parallel and Distributed Computing
- Analysis and Modeling of Real-Time and Hybrid Systems
- Specification, Validation, and Verification Techniques
- Semantics, Logic and Formal Models of Programs
- Theorem Proving and Model Checking
- Scott Domains for Concurrent Models

PUBLICATIONS

- **Dissertations**

1. I.B. Virbitskaite. Automatic Design of Data Flow Structures. Ph.D. thesis, Novosibirsk, Computing Center, 1990 (in Russian).
2. I.B. Virbitskaite. Formal Models and Correctness Analysis of Concurrent and Real-Time Systems. Doctor thesis, Novosibirsk, Institute of Informatics Systems, 2001 (in Russian).

- **Books**

1. I.B. Virbitskaite. Petri Nets: Modifications and Extensions. Novosibirsk: NSU, 2005, 126 p. (in Russian)
2. I.B. Virbitskaite. Semantic Models in Concurrency Theory. Novosibirsk: IIS SB RAS, 2000, 196 p. (in Russian)
3. I.B. Virbitskaite. Semantic Models of Concurrent Programs and Processes. Novosibirsk: NSU, 1996, 96 p. (in Russian)

- **Chapter of Book**

1. V.A. Val'kovsky, I.B. Virbitskaite. Dataflow Computing Systems. System Informatics. Novosibirsk: Nauka, Vol. 2, 1993, 38-72. (in Russian)

- **Editor of Conference Proceedings**

1. Irina Virbitskaite, Andrei Voronkov. Proceedings of 6th International Andrei Ershov Memorial Conference (PSI 2006), Novosibirsk, Russia, June 27-30, 2006. Revised Papers. (Springer-Verlag, LNCS 4378).
2. A. Pnueli, Irina Virbitskaite, Andrei Voronkov. Proceedings of 7th International Andrei Ershov Memorial Conference (PSI 2009), Novosibirsk, Russia, June 15-19, 2009. Revised Papers. (Springer-Verlag, LNCS 5947).

- **Selected Journal and Conference Papers**

1. I. Virbitskaite, N. Gribovskaya. Unifying behavioral equivalences of timed transition systems. *Programming and Computer Software* 36(3): 138-148 (2010).
2. N. Gribovskaya, I. Virbitskaite. A Categorical View of Timed Weak Bisimulation. In: Proc. TAMC 2010, Prague, Czech Republic, June 7-11, 2010, *Lectures Notes in Computer Science*, Vol. 6108, pp. 443-454.
3. I. Virbitskaite, N. Gribovskaya, E. Best. A Categorical View of Timed Behaviours. *Fundamenta Informaticae*, Vol. 102(1), 2010, p. 129-143.
4. N. Gribovskaya, I. Virbitskaite. Timed Delay Bisimulation is an Equivalence Relation for Timed Transition Systems. *Fundamenta Informaticae*, Vol. 93, 2009, p. 127-142.
5. A. Marchuk, I. Virbitskaite, et al. 7th International A.P. Ershov Memorial Conference «Perspectives of Systems Informatics» // *Herald of the RFBR*. – Vol. 3-4(63-64). - 2009, - p. 25-32 (in Russian).
6. I.B. Virbitskaite, R.S. Dubtsov. Semantic Domains of Timed Event Structures. *Programming and Computer Software* 34(3): 125–137 (2008).
7. N.S. Gribovskaya, I.B. Virbitskaite: A Categorical Observation of Timed Testing Equivalence. *PaCT 2007*: 35-46 (Springer-Verlag, LNCS 4671).
8. I.B. Virbitskaite. Sixth International Conference “Perspectives of System Informatics” *Programming and Computer Software* 33(3): 174–179 (2007).
9. M.V. Andreeva, I.B. Virbitskaite. Observational Timed Equivalences for Timed Stable Event Structures *Fundamenta Informaticae* 72(1-3): 1–19 (2006).
10. M.V. Andreeva, I.B. Virbitskaite. Timed equivalences for Timed Event Structures. *PaCT 2005*: 16–26 (Springer-Verlag, LNCS 3606).

11. I.B. Virbitskaite, N.S. Gribovskaya. Open Maps and Observational Equivalences for Timed Partial Order Models. *Fundamenta Informaticae* 60 (1-4): 383–399 (2004).
12. I.B. Virbitskaite, N.S. Gribovskaya: Open Maps and Trace Semantics for Timed Partial Order Models. *PSI 2003*: 248–259 (Springer-Verlag, LNCS 2890).
13. I.B. Virbitskaite: Observational Semantics for Timed Event Structures. *PSI 2001*: 214–224 (Springer-Verlag, LNCS 2244).
14. N.S. Moskalyova, I.B. Virbitskaite: On the Category of Event Structures with Dense Time. *FCT 2001*: 287–298 (Springer-Verlag, LNCS 2138).
15. I.B. Virbitskaite: Characterizing Timed Net Processes Categorically. *PaCT 2001*: 128–141 (Springer-Verlag, LNCS 2127).
16. I.B. Virbitskaite. Towards Decision of Testing Equivalence for Time Petri Nets. *WoLLIC 20007*: 181–190.
17. I.B. Virbitskaite, E.N. Bozhenkova. Analysis of Equivalence Relations of Event Structures with Continuous Time. *Programming and Computer Software* 26(5): 249–257 (2000).
18. M.V. Andreeva, E.N. Bozhenkova, I. B. Virbitskaite. Analysis of Timed Concurrent Models Based on Testing Equivalence. *Fundamenta Informaticae* 43(1-4): 1-20 (2000).
19. I.B. Virbitskaite, E.A. Pokozy: A Partial Order Method for the Verification of Time Petri Nets. *FCT 1999*: 547-558 (Springer-Verlag, LNCS 1684).
20. I.B. Virbitskaite, E. Pokozy: Parametric Behaviour Analysis for Time Petri Nets. *PaCT 1999*: 134–140 (Springer-Verlag, LNCS 1662).
21. I.B. Virbitskaite, A.V. Bystrov. Implementing Model Checking and Equivalence Checking for Time Petri Nets by the RT-MEC Tool. *PaCT 1999*: 49–54 (Springer-Verlag, LNCS 1662).
22. I. B. Virbitskaite. An event structure model for dataflow computing. *Computers and Artificial Intelligence* 18(1): 73–93 (1999).
23. I.B. Virbitskaite, E.A. Pokozy. Using Partial Orders to Verify Time Petri Nets. *Programming and Computer Software* 25(1): 22–33 (1999).
24. I.B. Virbitskaite, E.A. Pokozy. A Parametric Method for Verification of the Behaviour of Time Petri Nets. *Programming and Computer Software* 25(4): 193–203 (1999).
25. I.B. Virbitskaite, A.V. Bystrov. RT-Mec: a Tool for Validation and Verification of Petri Nets with Time Parameters. *WODES 1998*: 511-513 (The IEE Publisher, London).
26. I.B. Virbitskaite, E.A. Pokozy. A partial order algorithm for verifying time Petri nets. *WODES 1998*: 514-516 (The IEE Publisher, London).
27. I.B. Virbitskaite. On the Semantics of Concurrency and Nondeterminism: Bisimulations and Temporal Logics. *Electronic Notes in Theoretical Computer Science* 18: (1998).
28. I.B. Virbitskaite, A.V. Votintseva. Behavioural Characterizations of Partial Order Logic. *FCT 1997*: 463-474 (Springer-Verlag, LNCS 1279).
29. I.B. Virbitskaite, A.V. Votintseva. Partial Order Logics and Equivalences for Event Structures. *IMACS 1997*: Vol. 5, 505–510.
30. I.B. Virbitskaite. On Some Properties of Event Structures. *Cybernetics and System Analysis* 2: 45–55 (1997).
31. I.B. Virbitskaite, E.A. Pokozy. Towards Efficient Verification of Time Petri Net. *Logic Journal of the IGPL* 5(6): 919–921 (1997).
32. I.B. Virbitskaite, I.V. Tarasyuk. Timed Equivalence Notions for Timed Petri Nets. *Logic Journal of the IGPL* 5(6): 921–923 (1997).
33. I.B. Virbitskaite, A.V. Votintseva. Temporal Logics for Concurrent Nondeterministic Processes. *Logic Journal of the IGPL* 5(6): 923–926 (1997).

34. I.B. Virbitskaite, A.V. Votintseva, D.A. Chklyev. On Semantic Aspects of Dataflow Computations with Colored Tokens. *Programming and Computer Software* 22(3): 113–125 (1996).
35. I.B. Virbitskaite, A.V. Votintseva, E. Best. Investigating Equivalence Notions for Nondeterministic Processes. *PSI* 1996: 220–226.
36. V.E. Kotov, S.A. Starkova, I.B. Virbitskaite. On Varieties of Density and Crossing properties for Event Structures. *Computers and Artificial Intelligence* 14(6): 17–28 (1995).
37. I.B. Virbitskaite, E.N. Bozhenkova. Unified Characterization of Some Properties of Event Structures. *CONPAR 94-VAPP VI* 1994: 29–32 (RISC-Linz. - N 94-48).
38. I.B. Virbitskaite. Some characteristics of Nondeterministic Processes. *Parallel Processing Letters* 3(1): 99–106 (1993).
39. I.B. Virbitskaite. Observing Some Properties of Event Structures. *Proc. Formal Methods in Programming and Their Applications*, 1993. P 239–250. (Springer-Verlag, LNCS 735).
40. I.B. Virbitskaite. The Relative Strength of Density and Crossing Properties for Event Structures. *13th Intern. Conf. of Young Computer Scientists* 1993: 547–552.

CONFERENCE PROGRAM COMMITTEES

Co-Chair

6th International Andrei Ershov Memorial Conference “Perspectives of System Informatics” (PSI 2006), Novosibirsk, Russia, June 27-30, 2006.

7th International Andrei Ershov Memorial Conference “Perspectives of System Informatics” (PSI 2009), Novosibirsk, Russia, June 22-26, 2009.

8th Ershov Informatics Conference (PSI 2011), Novosibirsk, Russia, June 27 – July 1, 2011.

Member

4th Biennial International Conference “Advances in Information Systems” (ADVIS 2006), Izmir, Turkey, 18-20 October 2006.

9-th International Conference “Parallel Computing Technologies” (PaCT 2007), Pereslavl-Zalessky, Russia, September 3-7, 2007.

6th International Symposium Foundations of Information and Knowledge Systems (FoIKS 2010), Sofia, Bulgaria

All-Russian Conference “Modelling Informatics Systems” (MSI 2011), Novosibirsk, October, 2011.

OTHER PROFESSIONAL SERVICES

- Member of Scientific Council of IIS SB RAS,
- Member of Scientific Council of Mechanics and Mathematics Department of Novosibirsk State University.
- Member of Dissertational Council DM 003.046.01 (ICT SB RAS)
- Member of Dissertational Council DM 003.032.01 (IIS SB RAS)