

Curriculum vitae for Tarmo Uustalu

Personal data

Born 19 Jan. 1969 in Tallinn, Estonia, Estonian citizen, male, married, 3 children.

Higher education

PhD studies in computer science (software engineering), KTH Royal Institute of Technology, Sept. 1992–May 1998, PhD defended May 1998, PhLic defended May 1995

MSc studies in systems engineering and computer science, Tallinn University of Technology (TUT), Sept. 1987–June 1992, degree defended June 1992

Employment record

full professor, School of Computer Science (from March 2019 Dept. of Computer Science), Reykjavik University (RU), Oct. 2017–

lead research scientist, Institute of Cybernetics (from Jan. 2017 Dept. of Software Science), TUT, June 2009–(from Oct. 2017 part-time); head of lab, March 2014–

full professor of programming language semantics (part-time), Dept. of Computer Science (from Jan. 2017 Dept. of Software Science), TUT, Sept. 2004–Sept. 2017

associate professor (part-time), Dept. of Computer Science, TUT, Sept. 2002–Aug. 2004

postdoctoral scholarship holder (*bolseiro de pós-doutoramento*), Dep. de Informática, U. do Minho, Braga, Apr. 2000–Apr. 2002

senior researcher, Institute of Cybernetics at TUT, Sept. 1999–May 2009 (on leave to Minho, Apr. 2000–Apr. 2002)

acting associate professor (*vik. universitetslektor*), Inst. för Teleinformatik, KTH Royal Institute of Technology, Stockholm, July 1998–Aug. 1999

PhD student, research engineer (*forskningsingeniör*), Inst. för Teleinformatik, KTH, Stockholm, Sept. 1992–June 1998

technician, engineer (part-time), Institute of Cybernetics of Estonian Academy of Science, Sept. 1986–Aug. 1992

lab assistant (part-time), Institute of Cybernetics of Estonian Academy of Science, Dec. 1984–Apr. 1985

Guest positions

guest professor, U. Paris Nord (Paris 13), 2 weeks, Sept. 2019

guest professor, U. Paris Denis Diderot (Paris 7), 1 month, Jan. + Sept. 2018

Research

ORCID: 0000-0002-1297-0579

Scopus Author ID: 6602585906

ResearcherID (Publons): I-1242-2015

Research areas

programming language semantics, program analysis, program logics, functional programming, type theory, proof theory, category theory, constructive mathematics, proof assistants, certified programming and certified programming theory, formalization of mathematics

Publications

173 scientific publications, *see* separate list)

2853 citations, h-index 29 according to Google Scholar Citations (1 June 2024)

Invited talks

keynote speaker, 4th Wksh. on Structure Meets Power (Tallinn, July 2024)

keynote speaker, 68th Cracow Logic Conf., CLoCK-68 (Kraków, June 2023)

keynote speaker, 16th Int. Conf. on Concept Lattices and Their Applications (Tallinn, June 2022)

invited speaker, Wksh. on Polynomial Functors (Berkeley, CA/online, March 2021)

keynote speaker, Wksh. on Coalgebra, Horn Clause Logic and Types, CoALP-Ty 2016 (Edinburgh, Nov. 2016)

invited speaker, Wksh. “Certification of High-Level and Low-Level Programs” (Paris, June 2014)

special session invited speaker, 2009 Int. Conf. on Category Theory, CT 2009 (Cape Town, June/July 2009)

keynote speaker, GI WG “Logik in der Informatik” Meeting #14, (Braunschweig, Nov. 2007)

keynote speaker, 4th Int. Wksh. on Higher-Order Rewriting, HOR '07 (Paris, June 2007)

special session invited speaker, 2003 Assoc. for Symbolic Logic European Summer Meeting, Logic Colloquium '03 (Helsinki, Aug. 2003)

(Talks at meetings with attendance by invitation are not included here. Invited seminar talks are not included here.)

Teaching and supervision

Teaching at bachelor/master level

main instructor, Programming language semantics with applications, RU, autumn 2022, spring 2021

main instructor, Functional programming, RU, spring 2020

main instructor, Programming languages, RU, spring 2023, spring 2022, spring 2021, spring 2020, spring 2019, spring 2018

main instructor, Functional programming module of Functional and logic programming, Estonian IT College, autumn 2011, autumn 2010, autumn 2009, autumn 2008

main instructor, Discrete mathematics, TUT international MSc programme, spring 2005

main instructor, Advanced course in applied logic, TUT, spring 2004

main instructor, Logic in computer science, TUT, autumn 2016, autumn 2014, autumn 2013, autumn 2012, autumn 2011, autumn 2010, autumn 2009, autumn 2008, autumn 2007, autumn 2006, autumn 2005, autumn 2004, autumn 2002

assistant / main instructor, Logic programming, KTH, autumn 1998, autumn 1997, autumn 1996, autumn 1995

assistant, Knowledge representation and reasoning module, Knowledge-based software engineering, KTH, spring 1996, spring 1995, autumn 1994, autumn 1993, TUT, autumn 1994

Teaching at doctoral level

main instructor, Category theory, TUT, spring 2013

main instructor, Advanced functional programming, TUT, spring 2004

main instructor, Programming language semantics, TUT, spring 2014, spring 2012, spring 2010, spring 2006, spring 2003

main instructor, Computer science theory seminar, TUT, spring 2002–spring 2017

main instructor, Informal formal methods seminar, TUT, autumn 1999–spring 2000

main instructor, Agent logics, TUT, spring 1999

assistant, Modal logics and computation, KTH, spring 1998

main instructor, Programming in logic and Selected topics modules, Logic in computer science, KTH, winter 1995/96

main instructor, Denotational semantics module, Programming language semantics, KTH, spring 1993

main instructor, Constraint satisfaction and constraint programming, KTH, spring 1993

assistant, Algorithms of artificial intelligence, TUT, winter 1993/94, KTH, autumn 1992

Supervision at bachelor/master level

Calvin Lee, MSc studies in computer science, RU, autumn 2023–spring 2024

Tõnn Talvik, MSc studies in informatics (3+2), autumn 2015–spring 2017, BSc studies in the same, TUT, spring 2013

Denis Firsov, MSc studies in informatics (3+2), TUT, autumn 2010–spring 2012

Boriss Šelajev, MSc studies in informatics (3+2), TUT, autumn 2009–spring 2011

Andri Saar, MSc studies in informatics (3+2), TUT, spring 2008–spring 2009

Andres Toom, MSc studies in computer and systems engineering, TUT, autumn 2006–spring 2007

Mait Peekma, MSc studies in informatics, TUT, autumn 2012, BSc studies in informatics, TUT, spring–autumn 2005

Rustam Novikov, MSc studies in informatics, TUT, autumn 2003–spring 2005

Peep Küngas, MSc studies in computer and systems engineering, TUT, autumn 2000–spring 2002, BSc studies in the same, TUT, autumn 1998–spring 2000

Supervision at doctoral level

Calvin Lee, PhD studies in computer science, RU, autumn 2024–

Michele De Pascalis, PhD studies in information and communication technology, TUT, autumn 2022– (co-supervised with Niccolò Veltri)

Cheng-Syuan Wan, PhD studies in information and communication technology, TUT, winter 2021– (co-supervised with Niccolò Veltri)

Yasuaki Morita, PhD studies in computer science, RU, autumn 2020– (co-supervised with Dylan McDermott)

Hendrik Maarand, PhD studies in information and communication technology, TUT, autumn 2015–spring 2020 (defended)

Niccolò Veltri, PhD studies in information and communication technology, TUT, autumn 2012–spring 2017 (co-supervised with James Chapman, defended)

Denis Firsov, PhD studies in information and communication technology, TUT, autumn 2012–summer 2016 (defended)

Boriss Šelajev, PhD studies in information and communication technology, TUT, autumn 2011–summer 2014 (intermitted)

Elmo Todurov, PhD studies in information and communication technology, TUT, autumn 2012–spring 2014 (intermitted)

Andri Saar, PhD studies in information and communication technology, TUT, autumn 2009–autumn 2012 (intermitted)

Andres Toom, PhD studies in information and communication technology, TUT, autumn 2007– (co-supervised with Marc Pantel, INP Toulouse, industrial PhD student)

Ando Saabas, PhD studies in information and communication technology, TUT, autumn 2004–autumn 2008 (defended)

Supervision of interns

Basile Gros (MSc student from ENSEEIHT), internship, RU, summer 2022 (co-supervised with Dylan McDermott)

Sandra Schumann (BSc student from Harvard U.), internship, TUT, summer 2015

Danel Ahman (local MSc student from TUT), internship, TUT, summer 2011

Grigori Fedyukovich (MSc graduate from St. Petersburg State U.), internship, TUT, summer 2009

Rohit Bansal (integrated BSc+MSc student from IIT Delhi), internship, TUT, Dec. 2004-Jan. 2005

Supervision of postdocs

Stephan Spahn, postdoc, TUT, Dec. 2020–Feb. 2021, Aug.–Oct. 2021

Ülo Reimaa, guest postdoc from U. of Tartu within the *Quantified computational effects and interaction* project, RU, Feb.–May 2020

Niels Voorneveld, postdoc within the research support measure of IT Academy programme, TUT, Nov. 2019–June 2023

Dylan McDermott, postdoc within the *Quantified computational effects and interaction* and *Computational effects and high-level control* projects, RU, Nov. 2019–

Wolfgang Jeltsch, postdoc within EXCS, TUT, Oct. 2011–Dec. 2014

James Chapman, postdoc within EXCS, TUT, Jan. 2009–Jan. 2012

Silvio Capobianco, postdoc within EXCS, TUT, Jan. 2009–Jan. 2012

Mohamed El-Zawawy, postdoc within the MOBIUS and EXCS projects, TUT, Nov. 2008–Jan. 2010

Keiko Nakata, postdoc within the MOBIUS and EXCS projects, TUT, Oct. 2008–Feb. 2011

Olha Shkaravska, postdoc within the MOBIUS project, TUT, Sept. 2005–Aug. 2006

Andres Löh, postdoc within the eVikings II project, TUT, Feb.–March 2005

Guest courses, courses at summer schools

tutorial (with Dylan McDermott, Exequiel Rivas), Monad-comonad interaction laws (2×90 mins), 26th ACM SIGPLAN International Conference on Functional Programming, ICFP '21(Daejon/online, Aug. 2021)

instructor, intensive course Monads and interaction (4×80 mins lectures), 2021 Oregon Programming Languages Summer School, OPLSS '21 (Eugene, OR/online, June 2021)

instructor, intensive course Monads and interaction (4×60 mins lectures + 4×60 mins exercises), 2021 Midlands Graduate School, MGS '21 (Sheffield/online, April 2021)

instructor, intensive course Containers for effects and contexts (3×90 mins), Summer School on Generic and Effectful Programming, SSGEP '15 (Oxford, July 2015)

instructor, intensive course Practicing coinduction: big-step semantics and Hoare logics for nontermination (4×90 mins), Spring School of 11th Int. Conf. on Software Engineering and Formal Methods, SEFM '11 (Montevideo, Nov. 2011)

instructor, guest course Monads and more (4×90 mins), U. of Udine, July 2007

instructor, guest course Monads and more (4×90 mins), U. of Nottingham, May 2007

instructor, intensive course Inductive and coinductive types (5×90 mins), 15h Europ. Summer School in Logic, Language and Information, ESSLI 2003 (Vienna, Aug. 2003)

instructor, intensive course Introduction to the logical basis of applied AI (3×60 mins), Summer School “Information Systems Engineering” (Vilnius, June 1996)

instructor, guest course Programming in logic, U. of Tartu, autumn 1995

Service

Editorial boards

member of editorial board, J. of Univ. Comput. Sci., Nov. 2006–
guest editor for 9 special journal issues

Programme committees of conferences and workshops

PC co-chair, 34th Int. Conf. on Automated Reasoning with Analytic Tableaux and Related Methods, TABLEAUX '25 (Reykjavik, September 2025)

PC member, 21st Int. Coll. on Theoretical Aspects of Computing, ICTAC '24 (Bangkok, Nov. 2024)

PC member, 9th ACM SIGPLAN Int. Wksh. on Type-Driven Development, TyDe '24 (Milan, Sept. 2024)

PC member, 17th Int. Wksh. on Coalgebraic Methods in Computer Science, CMCS '24 (Luxembourg City, Apr. 2024)

PC member, 27th Int. Conf. on Foundations of Software Science and Computation Structures, FoSSaCS '24 (Luxembourg City, Apr. 2024)

PC member, 12th Int. Wksh. on Fixed Points in Computer Science, FICS '24 (Naples, Feb. 2024)

PC member, 20th Int. Coll. on Theoretical Aspects of Computing, ICTAC '23 (Lima, Dec. 2023)

PC member, 21st Asian Symp. on Programming Languages and Systems, APLAS '23 (Taipei, Nov. 2023)

PC member, 10th Conf. on Algebra and Coalgebra in Computer Science, CALCO '23 (Bloomington, IN, June 2023)

PC member, 11th Int. Wksh. on Fixed Points in Computer Science, FICS '23 (Warsaw, Feb. 2023)

PC member, 10th Symp. on Compositional Structures, SYCO-10 (Edinburgh, Dec. 2022)

PC member, 8th Int. Symp. on Dependable Software Engineering: Theories, Tools and Applications, SETTA '22 (Beijing, Oct. 2022)

PC member, 7th ACM SIGPLAN Int. Wksh. on Type-Driven Development, TyDe '22 (Ljubljana, Sept. 2022)

special session co-chair, Logic Colloquium '22 (Reykjavik/hybrid, June 2022)

PC member, 16th Wksh. on Coalgebraic Methods in Computer Science, CMCS '22 (Munich, Apr. 2022)

PC member, 7th Int. Symp. on Dependable Software Engineering: Theories, Tools and Applications, SETTA '21 (Beijing, Nov. 2021) – *moved online*

PC member, 24th Int. Symp. on Formal Methods, FM '21 (Beijing, Nov. 2021) – *moved online*

PC co-chair, 32nd Nordic Wksh. on Programming Theory, NWPT '21 (Reykjavik/hybrid, Nov. 2021)

PC member, 23rd Int. Symp. on Principles and Practice of Declarative Programming, PPDP '21 (Tallinn/hybrid, Sept. 2021)

PC member, 9th Conf. on Algebra and Coalgebra in Computer Science, CALCO '21 (Salzburg/hybrid, Aug/Sept. 2021)

PC member, 23rd Int. Conf. on Coordination Models and Languages, COORDINATION '21 (Malta/online only, June 2021)

PC member, 9th Int. Wksh. on Bidirectional Transformations, BX '21 (Bergen/online only, June 2021)

PC member, 6th Int. Symp. on Dependable Software Engineering: Theories, Tools and Applications, SETTA '20 (Beijing, July 2020) – *moved and rescheduled to Guangzhou, Nov. 2020, moved online*

PC member, 5th Int. Conf. on Formal Structures for Computation and Deduction, FSCD '20 (Paris, June/July 2020) – *moved online*

PC member, 36th Conf. on Mathematical Foundations of Programming Semantics, MFPS XXXVI (Paris, June 2020) – *moved online*

PC member, 8th Wksh. on Mathematically Structured Functional Programming, MSFP '20 (Dublin, Apr. 2020) –

moved online and rescheduled to Aug./Sept. 2020

PC member, 26th Int. Conf. on Types for Proofs and programs, TYPES '20 (Turin, March 2020) – *cancelled*

PC member, 5th Int. Symp. on Dependable Software Engineering: Theories, Tools and Applications, SETTA '19 (Shanghai, Nov. 2019)

PC co-chair, 31st Nordic Wksh. on Programming Theory, NWPT '19 (Tallinn, Nov. 2019)

PC member, 16th Int. Coll. on Theoretical Aspects of Computing, ICTAC '19 (Hammamet, Oct./Nov. 2019)

PC member, 21st Int. Symp. on Principles and Practice of Declarative Programming, PPDP '19 (Porto, Oct. 2019)

PC member, 3rd World Congress on Formal Methods, FM '19 (Porto, Oct. 2019)

PC member, 44th Int. Symp. on Mathematical Foundations of Computer Science, MFCS '19 (Aachen, Aug. 2019)

ERC member, 24th ACM SIGPLAN Int. Conf. on Functional Programming, ICFP '19 (Berlin, Aug. 2019)

PC member, 10th Wksh. on Syntax and Semantics of Low-Level Languages, LOLA '19 (Vancouver, BC, June 2019)

PC member, 25th Int. Conf. on Types for Proofs and programs, TYPES '19 (Oslo, June 2019)

PC member, 35th Conf. on Mathematical Foundations of Programming Semantics, MFPS XXXV (London, June 2019)

PC member, 30th Nordic Wksh. on Programming Theory, NWPT '18 (Oslo, Oct. 2018)

PC co-chair, 15th Int. Coll. on Theoretical Aspects of Computing, ICTAC '18 (Stellenbosch, Oct. 2018)

PC member, 34th Conf. on Mathematical Foundations of Programming Semantics, MFPS XXXIV (Halifax, NS, June 2018)

PC member, 19th Int. Symp. on Trends in Functional Programming, TFP '18 (Gothenburg, June 2018)

PC member, 29th Nordic Wksh. on Programming Theory, NWPT '17 (Turku, Nov. 2017)

PC member, 3rd Int. Symp. on Dependable Software Engineering: Theories, Tools and Applications, SETTA '17 (Changsha, Oct. 2017)

PC member, Int. Wksh. on Competitions, Usability, Benchmarks, Evaluation and Standardisation for Runtime Verification Tools, RV-CuBES '17 (Seattle, Sept. 2017)

PC member, 2017 ACM SIGPLAN Wksh. on Type-Driven Development, TyDe '17 (Oxford, Sept. 2017)

PC member, 42nd Int. Symp. on Mathematical Foundations of Computer Science, MFCS '17 (Aalborg, Aug. 2017)

PC member, 23rd Int. Conf. on Types for Proofs and programs, TYPES '17 (Budapest, May 2017)

PC member, 2nd Int. Symp. on Dependable Software Engineering: Theories, Tools and Applications, SETTA '16 (Beijing, Nov. 2016)

PC member, 28th Nordic Wksh. on Programming Theory, NWPT '16 (Aalborg, Oct./Nov. 2016)

PC member, Wksh. on Runtime Verification for Object-Oriented Languages and Systems, VORTEX '16 (Rome, July 2016)

PC member, 22nd Int. Conf. on Types for Proofs and programs, TYPES '16 (Novi Sad, May 2016)

PC member, 1st Int. Symp. on Dependable Software Engineering: Theories, Tools and Applications, SETTA '15 (Nanjing, Nov. 2015)

PC member, 27th Nordic Workshop on Programming Theory, NWPT '15 (Reykjavík, Oct. 2015)

PC member, 40th Int. Symp. on Mathematical Foundations of Computer Science, MFCS '15 (Milano, Aug. 2015)

PC member, 12th Int. Conf. on Mathematics of Program Construction, MPC '15 (Königswinter, June/July 2015)

PC chair, 21st Int. Conf. on Types of Proofs and Programs, TYPES '15 (Tallinn, May 2015)

PC member, 26th Nordic Wksh. on Programming Theory, NWPT '14 (Halmstad, Oct. 2014)

PC member, 15th Symp. on Trends in Functional Programming, TFP '14 (Soesterberg, May 2014)

PC member, 11th Latin American Symp. on Theoretical Informatics, LATIN '14 (Montevideo, March/Apr. 2014)

PC co-chair, 25th Nordic Wksh. on Programming Theory, NWPT '13 (Tallinn, Nov. 2013)

PC chair, 18th ACM SIGPLAN Int. Conf. on Functional Programming, ICFP '13 (Boston, MA, Sept. 2013)

PC member, 15th Int. ACM SIGPLAN Symp. on Principles and Practice of Declarative Programming, PPDP '13 (Madrid, Sept. 2013)

PC member, 10th Int. Coll. on Theoretical Aspects of Computing, ICTAC '13 (Shanghai, Sept. 2013)

PC member, 24th Int. Conf. on Rewriting Techniques and Applications, RTA '13 (Eindhoven, June 2013)

PC member, 19th Workshop on Types for Proofs and Programs, TYPES '13 (Toulouse, Apr. 2013)

PC member, 39th Int. Conf. on Current Trends in Theory and Practice of Computer Science, SOFSEM '13 (Špindleruv Mlýn, Jan. 2013)

PC member, ACM SIGPLAN 2013 Wksh. on Partial Evaluation and Program Manipulation, PEPM '13 (Rome, Jan. 2013)

PC member, 24th Nordic Wksh. on Programming Theory, NWPT '12 (Bergen, Oct./Nov. 2012)

PC member, 8th Wksh. on Fixed Points in Computer Science, FICS '12 (Tallinn, March 2012)

PC member, 23rd Nordic Wksh. on Programming Theory, NWPT '11 (Västerås, Oct. 2011)

PC member, 12th Symp. on Programming Languages and Software Tools, SPLST '11 (Tallinn, Oct. 2011)

PC member, 2nd Int. Conf. on Formal Verification of Object-Oriented Software FoVeOOS '11 (Torino, Oct. 2011)

PC member, 7th ACM SIGPLAN Wksh. on Generic Programming, WGP '11 (Tokyo, Sept. 2011)

PC member, 18th Int. Symp. on Fundamentals of Computation, FCT '11 (Oslo, Aug. 2011)

PC member, 13th Int. Symp. on Principles and Practice of Decl. Programming, PPDP '11 (Odense, July 2011)

PC member, 22nd Nordic Wksh. on Programming Theory NWPT '10 (Turku, Nov. 2010)

PC member, 3rd Wksh. on Mathematically Structured Functional Programming, MSFP '10 (Baltimore, MD, Sept. 2010)

PC member, 7th Wksh. on Fixed Points in Computer Science, FICS '10 (Brno, Aug. 2010)

PC member, Int. Conf. on Formal Verification of Object-Oriented Software, FoVeOOS '10 (Paris, June 2010)

PC member, 10th Int. Conf. on Mathematics on Program Construction, MPC '10 (Quebec City, June 2010)

PC member, 10th Int. Wksh. on Coalgebraic Methods in Computer Science, CMCS '10 (Paphos, March 2010)

PC member, 21st Nordic Wksh. on Programming Theor, NWPT '09 (Lyngby, Oct. 2009)

PC co-chair, 6th Wksh. on Fixed Points in Computer Science, FICS '09 (Coimbra, Sept. 2009)

PC member, 3rd Wksh. on Normalization by Evaluation, NBE '09 (Los Angeles, CA, Aug. 2009)

PC member, 2009 ACM SIGPLAN Wksh. on Partial Evaluation and Semantics-Based Program Manipulation, PEPM '09 (Savannah, GA, Jan. 2009)

PC co-chair, 20th Nordic Wksh. on Programming Theory, NWPT '08 (Tallinn, nov. 2008)

PC member, 9th Int. Conf. on Mathematics of Program Construction, MPC '08 (Marseille, July 2008)

PC member, 2nd Wksh. on Mathematically Structured Functional Programming, MSFP '08 (Reykjavík, July 2008)

PC member, 9th Int. Wksh. on Coalgebraic Methods in Computer Science, CMCS '08 (Budapest, Apr. 2008)

PC member, 19th Nordic Wksh. on Programming Theory, NWPT '07 (Oslo, Oct. 2007)

PC member, 9th Int. ACM SIGPLAN Symp. on Principles and Practice of Decl. Programming, PPDP '07 (Wrocław, July 2007)

PC member, 18th Nordic Wksh. on Programming Theory, NWPT '06 (Reykjavík, Oct. 2006)

PC co-chair, Wksh. on Mathematically Structured Functional Programming, MSFP '06 (Kuressaare, July 2006)

PC chair, 8th Int. Conf. on Math. of Program Construction, MPC '06 (Kuressaare, July 2006)

PC member, 8th Int. Wksh. on Coalgebraic Methods in Computer Science, CMCS '06 (Vienna, March 2006)

PC member, 17th Nordic Wksh. on Programming Theory, NWPT '05 (Copenhgen, Oct. 2005)

PC member, 6th Symp. on Trends in Functional Programming, TFP '05 (Tallinn, sept. 2005)

PC member, 16th Nordic Wksh. on Programming Theory, NWPT '04 (Uppsala, Oct. 2004)

PC member, 15th Nordic Wksh. on Programming Theory, NWPT '03 (Turku, Oct. 2003)

Steering committees of conferences and workshops

SC member, Int. Coll. on Theoretical Aspects of Computing, ICTAC, 2019–

SC member, Int. Confs. on Mathematics of Program Construction, MPC, 2017–

SC member, Wkshs. on Dependently Typed Programming, DTP, 2013–[2016]

SC member, Wkshs. on Generic Programming WGP, 2013–2016

SC member, ACM SIGPLAN Int. Confs. on Functional Programming, ICFP, 2012–2015

SC member, Int. Confs. on Types for Proofs and Programs, TYPES, 2011–2017

SC member, Wkshs. on Mathematically Structured Functional Programming, MSFP, 2010–

SC/EG member, Europ. Joint Confs. on Theory and Practice of Software, ETAPS, 2010–2022

SC member, Wkshs. on Fixed Points in Computer Science, FICS, 2009–

Organization of conferences, workshops

OC chair, 15th Int. Symp. on Frontiers of Combining Systems, FroCoS '25 / 16th Int. Conf. on Interactive Theorem Proving, ITP '25 / 34th Int. Conf. on Analytic Tableaux and Related Methods, TABLEAUX '25 (Reykjavik, Sept. 2025)

co-organizer, World Logic Day '24 Logic in Estonia event (Tallinn/hybrid, Jan. 2024)

co-organizer, World Logic Day '23 Logic in Estonia event (Tallinn/hybrid, Jan. 2023)

OC member, Logic Colloquium '22 (Reykjavik/hybrid, June 2022)

co-organizer, World Logic Day '22 Logic in Estonia event (Tallinn/online, Jan. 2022)

OC co-chair, 32nd Nordic Wksh. on Programming Theory, NWPT '21 (Reykjavik/hybrid, Nov. 2021)

OC member, 23rd Int. Symp. on Principles and Practice of Declarative Programming, PPDP '21 / 31st Int. Symp. on Logic-based Program Synthesis and Transformation, LOPSTR '21 (Tallinn/hybrid, Sept. 2021)

OC member, 31st Nordic Wksh. on Programming Theory, NWPT '19 (Tallinn, Nov. 2019)

organizer, COST action EUTYPES WG meeting (Caparica near Lisbon, Sept. 2016)

organizer, COST action ARVI MC&WG meeting (Tallinn, Dec. 2015)

organizer, Estonian-Finnish logic meeting (Rakvere, Nov. 2015)

OC chair, 25th Nordic Wksh. on Programming Theory, NWPT '13 (Tallinn, Nov. 2013)

co-organizer, NII Shonan meeting on “Coinduction in computation structures and programming languages” (Shonan Village, Sept./Oct. 2013)

OC chair, 15th European Joint Conf. on Theory and Practice of Software, ETAPS '12 (Tallinn, March 2012)

co-organizer, Joint Estonian-Latvian Computer Science Theory Days, Randivälja (Feb. 2024), Riga (May 2022), Pärnu (Oct. 2019), Riga (Oct. 2018), Tartu (Nov. 2017), Lilaste-2, Latvia (Oct. 2016), Ratnieki, Latvia (Oct. 2014), Lilaste, Latvia (Sept. 2012), Rakari, Latvia (Sept./Oct. 2010)

OC chair, 20th Nordic Wksh. on Programming Theory, NWPT '08 (Tallinn, Nov. 2008)

OC member, TestCom-FATES/FORTE '07 (Tallinn, June 2007)

OC chair, 8th Int. Conf. on Math. of Program Construction / 11th Int. Conf. on Algebraic Methodology and Software Technology, MPC/AMAST '06 (Kuressaare, July 2006)

organizer, IFIP WG 2.8 Meeting #22 (Kalvi, Oct. 2005),

OC chair, 6th Symp. on Trends in Functional Programming / 10th ACM SIGPLAN Int. Conf. on Functional Programming / 4th Int. Conf. on Generative Programming and Component Engineering, TFP/ICFP/GPCE '05

(Tallinn, Sept./Oct. 2005)

OC chair, FP5 IST Thematic Network APPSEM II 2nd Ann. Meeting, APPSEM '04 (Tallinn, Apr. 2004)

OC member, 14th Nordic Wksh. on Programming Theory, NWPT '02 (Tallinn, Nov. 2002)

initiator and co-organizer, Estonian Computer Science Theory Days, Kõo (Jan. 2016), Jõeküla (Oct. 2015), Rogosi (Feb. 2015), Narva-Jõesuu (May 2014), Saka (Oct. 2013), Otepää (Feb. 2013), Kubija (Jan. 2012), Tõrve (Oct. 2011), Nelijärve (Feb. 2011), Andu (Feb. 2010), Mäetaguse (Oct. 2009), Kääriku (Jan./Feb. 2009), Jõulumäe (Oct. 2008), Põlva (Jan. 2008), Vanaõue (sept. 2007), Rõuge (Jan. 2007), Voore (Sept./Oct. 2006), Koke-3 (Feb. 2006), Viinistu (Oct. 2005), Koke-2 (Feb. 2005), Veskisilla (Oct. 2004), Koke (Jan./Feb. 2004), Pedase (Oct. 2003), Arula (Feb. 2003), Roosta (Oct. 2002)

organizer of (often weekly) formal methods/theory research seminar at Inst. of Cybernetics, TUT, autumn 1999–spring 2017

Organization of schools, courses

main organizer, 26th Estonian Winter School in Computer Science, EWSCS '24 (Viinistu, March 2024)

co-organizer, CARI/ICTAC 2018 spring school (Stellenbosch, Oct. 2018)

main organizer, COST action EUTYPES summer school (Ohrid, Macedonia, July 2017)

organizer, guest course by Robin Cockett (U. of Calgary), Introduction to restriction categories, TUT, Feb. 2013

organizer, guest course by Ralph Matthes (IRIT), Monads for programming and verification, TUT, May 2008

organizer, guest course by Peter Thiemann (U. Freiburg), Types and analyses for scripting languages, TUT, Feb. 2008

main organizer, COST action FoVeOOS winter school (Viinistu, Estonia, Jan. 2008)

organizer, guest course by Gordon Pace (U. of Malta), Functional languages for synchronous hardware design and verification, TUT, Sept. 2006

organizer, guest course by Marc Bezem (U. of Oslo), Theory and practice of geometric logic, TUT, Feb. 2005

PC member, 5th Int. Summer School and Wksh. on Advanced Functional Programming, AFP '04 (Tartu, Aug. 2004)

organizer, guest course by Thorsten Altenkirch (U. of Nottingham), An introduction to type theory, TUT, Sept. 2003

main organizer, 9th–25th Estonian Winter Schools in Computer Science, EWSCS '04–'20 (Palmse, March annually)

co-organizer, 4th–8th Estonian Winter Schools in Computer Science, EWSCS '99–'03 (Palmse, March annually)

Service as opponent/grading committee member

grading committee member, PhD thesis of Elena Di Lavore, Tallinn U. of Technology, 2023

grading committee chair, PhD thesis of Mario Román, Tallinn U. of Technology, 2023

grading committee member, PhD thesis defense of Alexandre Garcia de Oliveira, U. do São Paulo, 2023

opponent, PhD thesis defense of Nachiappan Valliappan, Chalmers U. of Techn., 2023

grading committee member, PhD thesis defense of Duncan Attard, U. of Malta / Reykjavik U., 2023

reviewer, PhD thesis of Ian Shillito, Australian Nat. U., 2022

opponent, PhD thesis defense of Giulio Fellin, U. of Helsinki / U. di Trento / U. di Verona, 2022

reviewer, PhD thesis of Bryce Clarke, Macquarie University, 2022

external reviewer, PhD thesis defense of Stephanie Feilitzsch, Technische U. Dresden, 2022

opponent, PhD thesis defense of Daniel S. Fava, U. of Oslo, 2021

external reviewer, PhD thesis defense of Francesco Dagnino, U. di Genova, 2021

grading committee member, PhD thesis defense of Niels van der Weide, Radboud U. Nijmegen, 2020

grading committee member, PhD thesis defense of Ian Cassar, U. of Malta / Reykjavik U., 2020

grading committee member, PhD thesis defense of Susanna Figueiredo de Rezende, KTH, 2019

grading committee member, habilitation thesis defense of Christine Tasson, U. Paris Diderot (Paris 7), 2018

opponent, PhD thesis defense of Renato Neves, U. do Minho, 2018

reviewer, habilitation thesis of Sergei Goncharov, FAU Erlangen-Nürnberg, 2018

opponent, PhD thesis defense of Robin Kaarsgaard, Copenhagen U., 2018

grading committee member, PhD thesis defense of Henning Basold, Radboud U. Nijmegen, 2018

grading committee member, PhD thesis defense of Jovana Obradovic, U. Paris Diderot (Paris 7), 2017

grading committee member, PhD thesis defense of Aivo Anier, TUT, 2016

opponent, PhD thesis defense of Jan Rochel, U. Utrecht, 2016

opponent, PhD thesis defense of Guilhem Moulin, Chalmers U. of Techn., 2016

opponent, PhD thesis defense of Régis Spadotti, U. Paul Sabatier (Toulouse 3), 2016

external examiner, PhD thesis defense of Dominic Orchard, U. of Cambridge, 2013

opponent, PhD thesis defense of Mai Thuong Tran, U. of Oslo, 2013

grading committee member, PhD thesis defense of Célia Picard, U. Paul Sabatier (Toulouse 3), 2012

opponent, PhD thesis defense of Rodrigue Tschougong, U. Yaoundé 1, 2012

grading committee member, PhD thesis defense of Juri Gavšin, TUT, 2011

reviewer, PhD thesis of Linda Postniece, Australian Nat. U., 2011

opponent, PhD thesis defense of Ingrid Chieh Yu, U. of Oslo, 2010

grading committee chair, PhD defense of Jürjo-Sören Preden, TUT, 2010

external examiner, PhD thesis defense of Mauro Jaskelioff, U. of Nottingham, 2009

grading committee chair, PhD defense of Andres Kull, TUT, 2009

grading committee chair, PhD defense of Tobias Gedell, Chalmers U. of Techn., 2008

opponent, PhD thesis defense of Härmel Nestra, U. of Tartu, 2006

reviewer, PhLic thesis defense of Johan Glimming, Stockholms U., 2005

opponent, PhD thesis defense of Agneta Eriksson Granskog, Stockholms U., 2003

Assessment of funding applications

referee of a PhD project proposal for Fonds de la Recherche Scientifique FNRS, 2023

reviewer of a project proposal for 2022 for Hungarian Academy of Sciences Lendület Momentum Programme, 2022

member of expert panel for exact sciences, Estonian Research Council (ETAG) evaluation committee, 2021

reviewer of a project proposal for Agence Nationale de la Recherche (ANR), 2020

reviewer of a project proposal for UK Research and Innovation (UKRI), 2020

reviewer of a project proposal for Polish National Science Centre (NCN), 2019

reviewer of a project proposal for Natural Sciences and Engineering Research Council of Canada (NSERC), 2018

member of expert panel for engineering sciences, Estonian Research Council (ETAG) evaluation committee, 2015–2017

member of expert group for exact sciences, (Estonian) Council for Scientific Competence (TKN), 2006–2011, 2005–2006

member of expert panel for engineering science, Estonian Science Foundation (ETF), 2002

reviewer of a project proposal for Flanders Research Foundation Flanders (FWO), 2016
reviewer of a project proposal for Austrian Science Fund (FRF), 2014
reviewer of a project proposal for South-African National Research Foundation (NRF), 2014
reviewer of project proposals for Icelandic Center for Research (Rannís), 2010, 2005
reviewer of a project proposal for Netherlands Organisation for Scientific Research Research (NWO), 2001
reviewer of project proposals for Estonian Science Foundation (ETF), several occasions

Assessment of job applications

chair of assessment committee for promotion from assistant to associate professor, RU, 2023
external reviewer for promotion from associate professor to research professor, IMDEA, 2022
evaluator for the midterm review of an assistant professor, U. Leiden, 2022
evaluator for promotion to permanent-track assistant professor, RU, 2020
chair of assessment committee for promotion from associate to full professor, RU, 2020
member of hiring and assessment committee for faculty positions, RU, 2020
external reviewer for promotion from senior research fellow to reader, U. of Edinburgh, 2018
member of hiring committee for a full professor position, TUT, 2018
member of assessment committee for a full professor position, TUT, 2017
external reviewer for promotion to tenure, Pohang U. of Sci. and Techn., 2014
member of assessment committee for research and teaching positions at U. of Tartu, 2022, 2017, 2014, 2013, 2012
external reviewer for promotion to tenure, U. of Saskatchewan, 2011
external reviewer for awarding the title of docent, Chalmers U. of Technology, 2008

Unit supervision

head of Lab. for High-Assurance Software (20..25 people), Dept. of Software Science, TUT, Jan. 2017–
head of Lab. of Software Science (20..25 people), Institute of Cybernetics, TUT, March 2014–Dec. 2016
leader of (informal) Logic and Semantics Group (5..10 people), Institute of Cybernetics/Dept. of Software Science, TUT, autumn 2002–

Management of large projects

project leader (approx. 60 senior staff, approx. 80 students from TUT, U. of Tartu and Cybernetica), ERDF funded national centre of excellence in research *Estonian Excellence in Computer Science, EXCS*, July 2008–August 2015
project leader (approx. 70 students), ESF funded national doctoral school *Doctoral School in Information and Communication Technologies, IKTDK*, Sept. 2005–June 2008

Supervisory boards/councils and committees

member of research and graduate study council of Dept. of Computer Science, RU, Jan. 2022–Dec. 2023
chair of academic committee of Dept. of Software Science, TUT, Dec. 2021–
member of university's research council, RU, Apr. 2019–Oct. 2019
member of council of Dept. of Software Science, TUT, Sept. 2022–, Sept. 2019–Aug. 2022, Jan. 2017–Aug. 2019
member of council of School of ICT, TUT, Sept. 2019–Aug. 2022, Jan. 2017–Aug. 2019
member of university council's research committee, TUT, Jan. 2017–Feb. 2018

member of researcher ethics guidelines working group, Estonian Research Council (ETAG), March 2016–Oct. 2017

member of committee for university-level structural reform of teaching and research in ICT, TUT, spring 2016

member of research council, Institute of Cybernetics, TUT, Apr. 2013–Apr. 2016, Apr. 2010–Apr. 2013, March 2009–Apr. 2010, Apr. 2004–Apr. 2007

Funding received

Funding from the Icelandic state

principal applicant and project leader, Ministry of Higher Education, Science and Innovation university collaboration project *Icelandic advantage in computer-assisted proof* (Jan. 2024–Dec. 2025; 51840 kISK = 345 kEUR)

principal applicant and project leader, Icelandic Center for Research (Rannís) Icelandic Research Fund research project no. 228684 *Computational effects and high-level control* (Jan. 2022–Dec. 2024; 63750 kISK = 435 kEUR)

principal applicant and project leader, Icelandic Center for Research (Rannís) Icelandic Research Fund research project no. 196323 *Quantified computational effects and interaction* (Jan. 2019–Dec. 2021; 46314 kISK = 345 kEUR)

Funding from the Estonian state

co-applicant and co-investigator, Estonian Research Council (ETAG) personal team grant PRG1210 *Automata in learning, interaction and concurrency* (Jan. 2021–Dec. 2025; 975 kEUR for the first 4 years out of 5; Paweł Sobociński leads the project)

principal applicant and project co-leader, *Trustworthy software research theme* in TUT's share of Information Technology Foundation for Education (HITSA) *IT Academy's research measure* (July 2018–Dec. 2022; 1634 kEUR to TUT, of which this theme should have accounted for $\sim 1/3$; TUT's participation was coordinated by Gert Jervan)

principal applicant and project leader, Estonian Ministry of Education and Research (HTM) institutional research grant IUT33-13 *Methods, tools and processes for software with strong guarantees* (Jan. 2015–Dec. 2020; 1080 kEUR)

applicant and project leader, Estonian Science Foundation (ETF) research grant 9475 *Mathematical structures in programming languages* (Jan. 2012–March 2016; 34 kEUR)

principal applicant and project leader, HTM target-financed research theme 0140007s12 *Dependable software and human language technologies* (Jan. 2012–Dec. 2014; 515 kEUR)

applicant and project leader, ETF research grant 6940 *Type systems, program logics and trustworthy code generation* (Jan. 2007–Dec. 2010; 955 kEEK = 61 kEUR)

principal applicant and project leader, HTM target-financed research theme 0322709s06 *Dependable software and human language technologies* (Jan. 2006–Dec. 2011; 968 kEUR)

applicant and project leader, Estonian Information Technology Foundation (EITSA) grant to invite a foreign instructor (2005)

applicant and project leader, 14 EITSA grants to organize the EWSCS annual winter school (2003–2016)

applicant and project leader, ETF research grant 5567 *Nonclassical logics and programming theory* (Jan. 2003–Dec. 2006; 758 kEEK = 48 kEUR)

project staff member, HTM national centre of excellence *Centre for dependable computing, CDC* (Nov. 2002–Dec. 2007; 6839 kEEK = 437 kEUR) (Jaan Penjam, IoC, was the principal applicant and project leader, I assisted him)

applicant and grantee, 8 EITSA travel grants (2012, 2011, 2008, 2007, 2006, 2004, 2002 \times 2)

applicant and project leader, ETF research grant 4155 *Intermediate and modal logics in programming language theory and formal methods* (Jan. 2000–Dec. 2002; 478 kEEK = 31 kEUR)

Funding from EU structural assistance (allocated by Estonian government institutions)

principal applicant and project co-leader, *Trustworthy software technologies research theme* in TUT's share of the EU structural assistance (2014–2020, ESF) ICT programme activity 2014-2020.4.05.19-0001 *Implementation of IT Academy's research measure* (July 2019–Aug. 2023; 6423 kEUR to TUT, of which this theme should account for $\sim 1/3$; TUT's participation is coordinated by Gert Jervan)

core group member, EU structural assistance (2014–2020, ERDF) centers of excellence measure project 2014-2020.4.01.15-0018 *Excellence in IT in Estonia, EXCITE* (March 2016–March 2023; 4819 kEUR) (Maarja Kruusmaa, TUT, was the principal applicant, I was one of her main assistants in the application writing; Ivo Fridolin was the project leader after Maarja Kruusmaa)

principal applicant and project leader, EU structural assistance (2007–2013, ERDF) measure for supporting ICT R&D project 3.2.1201.13-0029 *Coinduction for semantics, analysis and verification of communicating and concurrent reactive software* (Apr. 2013–Nov. 2015; 523 kEUR)

principal applicant and project leader, EU structural assistance (2007–2013, ERDF) centres of excellence measure project 3.2.0101.08-0013 *Centre of excellence in computer science, EXCS* (July 2008–Aug. 2015; 4221 + 243 kEUR) (my main co-applicant was Peeter Laud, Cybernetica)

project leader, EU structural assistance (2004–2006, ESF) national doctoral school project 1.0101-0238 *Doctoral school in Information and Communication Technologies, IKTDK* (Sept. 2005–June 2008; 7298 kEEK = 466 kEUR) (Ennu Rüstern, TUT, was the principal applicant)

Funding from EU framework programmes

core group member, H2020 WIDESPREAD/TEAMING coordination and support action 664564 *Centre of excellence on connected digital economy, ITEE* (June 2015–May 2016; 493 kEUR) (Jaak Vilo, U. of Tartu, Gert Jervan, TUT, Stuart Anderson, U. of Edinburgh, were the principal applicants)

principal applicant of project enlargement application to include IoC and IoC site leader, FP7 ICT integrated project 231620 *Highly available and trustworthy software using formal models, HATS* (March 2009–Feb. 2013, IoC joined in May 2010; 5636 kEUR) (my main co-applicant was Peeter Laud, Cybernetica; the principal applicant for the whole project was Reiner Hähnle, Chalmers)

IoC site leader, FP6 IST integrated project 15905 *Mobility, ubiquity, security for small devices, MOBIUS* (Sept. 2005–Aug. 2009; 6250 kEUR) (Gilles Barthe, INRIA Sophia Antipolis, was the principal applicant, I was one of the application writers)

IoC site leader, FP6 IST coordination action 510996 *Types for proofs and programs, TYPES* (Sept. 2004–Apr. 2008; 647 kEUR) (Bengt Nordström, Chalmers, was the principal applicant)

IoC site leader, FP5 IST thematic network IST-2001-38957 *Applied semantics, APPSEM II* (Jan. 2003–June 2006; IoC joined in Jan. 2004; 400 kEUR) (Martin Hofmann, LMU München, was the principal applicant)

member of coordinating team, FP5 IST accompanying measures project IST-2001-37592 *Establishment of a virtual centre of excellence for ICT RTD in Estonia, eVikings II* (Nov. 2002–Sept. 2005; 900 kEUR) (Jaan Penjam, IoC, and Tarmo Pihl, Archimedes Foundation, were the principal applicants)

Other international funding

co-applicant and member of management committee, COST action CA19135 *Connecting education and research communities for an innovative resource aware society, CERCIRAS* (Sept. 2020–Sept. 2024; 263 kEUR for the first 2 years out of 4) (Gordana Rakic, U. of Novi Sad, was the principal applicant, I was among the co-applicants)

co-applicant and project co-leader for Estonia, ETAG/Campus France Estonian-French collaboration programme *Parrot* project grant *Mathematical dualities in programming languages* (Jan. 2017–Dec. 2018; ~ 12 kEUR) (the co-applicant and project co-leader for France was Pierre-Louis Curien, IRIF, U. Paris Diderot)

action vice-chair, COST action CA15123 *European research network on types for programming and verification, EUTYPES* (March 2016–March 2020; 568 kEUR) (Herman Geuvers, Radboud U. Nijmegen was the principal applicant, I was among the co-applicants)

member of management committee, COST action IC1402 *Runtime verification beyond monitoring, ARVI* (Dec.

2014–Dec. 2018; ~400 kEUR) (Martin Leucker, U. Lübeck, was the principal applicant, I was among the co-applicants)

member of management committee, COST action IC1201 *Behavioral types for reliable large-scale software systems*, *BETTY* (Dec. 2013–Oct. 2016; ~400 kEUR) (Simon Gay, U. of Glasgow, was the principal applicant)

member of management committee, COST action IC0901 *Rich models toolkit* (Dec. 2011–Oct. 2013; ~400 kEUR) (Viktor Kuncak, ETF Zürich, was the principal applicant)

co-applicant and project co-leader for Estonia, ETF/Égide Estonian-French collaboration programme project grant *Parrot Formal semantics for synchronous languages with mixed data and control flow* (Jan. 2011–Dec. 2012; ~12 kEUR) (the co-applicant and project co-leader for France was Marc Pantel, INP Toulouse)

member of management committee, COST action IC0701 *Formal verification of object-oriented software*, *FoVeOOS* (March 2008–March 2012; ~400 kEUR) (Bernhard Beckert, Karlsruhe Inst. of Techn., was the principal applicant, I was among the co-applicants)

co-applicant and project co-leader for Estonia, Royal Society joint project grant *Programming with algebras, coalgebras, monads, comonads* (July 2003–June 2005; 6000 GBP) (the co-applicant and co-leader for UK was Neil Ghani, U. of Leicester)

co-applicant and project co-leader for Estonia, ETF/Égide Estonian-French collaboration programme *Parrot* research grant *Types and proofs for software safety* (Jan. 2003–Dec. 2004; ~12 kEUR) (the co-applicant and co-leader for France was Gilles Barthe, INRIA Sophia Antipolis)

scholarship beneficiary, postdoctoral scholarship from U. do Minho, Portuguese Foundation for Science and Technology (FCT) (2 years, Apr. 2000–Apr. 2002) (Gilles Barthe, U. do Minho, my supervisor there, was the applicant)

applicant and grant beneficiary, full PhD study grant from KTH (*excellenstjänst*) (4 nominal years of 100 pct studies + 1 year of teaching, Sept. 1992–Aug. 1997)

Recognitions and awards

Membership in academies, distinguished associations

member, Estonian Academy of Sciences, Sept. 2010– (members are elected; membership is lifetime; there can be max 60 members younger than 65 years across all disciplines)

member, Int. Federation for Inform. Processing (IFIP), WG 2.1 “Algorithmic Languages and Calculi”, Sept. 2010– (membership is by invitation)

National and international awards

TUT School of IT best paper of 2020 in life, physical and health sciences (one of two prizes), Feb. 2021

Republic of Estonia’s Order of the White Star, 3rd class, Feb. 2019

TUT 100th anniversary 100 best colleagues medal, Sept. 2018

Estonian state research award for research achievement in past 4 years in physical sciences (20000 EUR), Feb. 2015

best paper nomination at ETAPS 2012, March 2012

TUT 2010 researcher of the year, Feb. 2011

best paper nomination at ETAPS 2010, Apr. 2010

TUT best paper of 2008–2009 in life and physical sciences (2nd–3rd prize), Feb. 2010

Boris Tamm stipend of the Development Fund of TUT (a stipend for a young TUT researcher in ICT, 100000 EEK ≈ 6400 EUR), Nov. 2002

Contact data

Dept. of Computer Science, Reykjavik University, Menntavegi 1, 102 Reykjavik, Iceland;
tarmo@ru.is; +354 825 6495

Dept. of Software Science, Tallinn University of Technology, Akadeemia tee 21B, Tallinn, Estonia;
tarmo@cs.ioc.ee; <https://cs.ioc.ee/~tarmo>

Tarmo Uustalu
1 June 2024