

Johan Lilius
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Biografi

Prof. Johan Lilius is full professor of Embedded Systems at Åbo Akademi since 2001. He is an experienced academic researcher, educator and leader. He was co-PI of the research group "Formal Methods in Programming" that was awarded the status of Centre of Excellency by the Academy of Finland. He has won the Ten-Year Most Influential Paper Award at the ACM/IEEE Conference on Model Driven Engineering Languages and Systems, and a number of Best Paper awards. In 2015 he won the Gadd Prize for Research Excellence at Åbo Akademi. He has experience in leading large academic organisations. He has been director of TUCS, Turku Center for Computer Science, and Head of the Department of IT under several periods. Under his leadership he has planned and implemented the restructuring of the department and its education as part of two major reorganizations of the University. He is a member of the steering group of the Digivisio2030 project, a large national project involving all HEIs in Finland, that is creating a new ecosystem for education in Finland. He is the founder and co-PI of the MAST Institute, a joint research institute of Åbo Akademi and Novia Maritime Academy developing tools and techniques for safe autonomous navigation of vessels. He is experienced in leading PhD reserach, he has been head of the TUCS graduate programme, he has completed the supervision of 11 doctoral students, and is currety supervising 4 students. He has co-organised and co-chaired several workshops, summer schools and conferences. He has published over 170 research papers. His research interests include Energy-efficient Software, Safety of autonomous vessels, and Embedded Deep Neural Computing.

Anställning

Professor

Informationsteknologi
Åbo Akademi
Turku, Finland
1 jan. 2010 → present

Visiting Professor

Institut National des Sciences Appliquées de Rennes
Rennes, Frankrike
1 okt. 2016 → 1 okt. 2016

Director

Åbo datatekniska forsknings- och utbildningscentrum
Turku, Finland
1 jan. 2011 → 1 dec. 2014

Northeast Normal University

Changchun, Kina
1 jan. 2009 → present

Projekt

- KSE: Kvarken Space Eco**
Lilius, J., Iancu, B. & Zelioli, L.
01/09/19 → 31/08/22
Projekt: Forskning
- INTERSYS: Modular Interoperability for Healthcare Cyber-Physical Systems**
Lilius, J. & Liljeberg, P.
01/01/16 → 31/12/17
Projekt: Forskning

3. **ParallaX**
Lilius, J., Westerholm, J., Lafond, S. & Björkqvist, J.
01/05/13 → 30/06/16
Projekt: Forskning
4. **AMEBA: Agent Based Management of Embedded Data Reserve**
Lilius, J., Lafond, S. & Liljeberg, P.
01/01/12 → 31/12/14
Projekt: Forskning
5. **DORADO: Dataflow Oriented Automated Design Toolchain**
Lilius, J. & Lafond, S.
01/09/11 → 31/08/15
Projekt: Forskning
6. **EFCO: Efficient Feature Combination**
Lilius, J.
01/01/06 → 01/01/08
Projekt: Forskning
7. **ADSEES: Architecture-driven software engineering for embedded systems**
Lilius, J.
01/01/01 → 01/01/03
Projekt: Forskning

Publikationer

Triple Helix Collaborative Innovation and Value Co-creation in an Industry 4.0 Context

Khan, I. S., Kauppila, O., Iancu, B., Jurmu, M., Jurvansuu, M., Pirttikangas, S., Lilius, J., Koho, M., Marjakangas, E. & Majava, J., juli 2022, I: *International Journal of Innovation and Learning*. 32, 2, s. 125-147

ABOships - An Inshore and Offshore Maritime Vessel Detection Dataset with Precise Annotations

Iancu, B., Soloviev, V., Zelioli, L. & Lilius, J., 5 feb. 2021, I: *Remote Sensing*. 13, 5, s. 1-17 17 s., 988.

A experimental research platform for maritime automation and autonomous surface ship applications

Brushane, F., Jämsä, K., Lafond, S. & Lilius, J., 2021, I: *IFAC-PapersOnLine*. 54, 16, s. 390-394 5 s.

Challenges of Artificial Intelligence and Machine Learning Software in Autonomous Vessels

Ashraf, A., Lilius, J., Porres Paltor, I., Walden, M. & Petre, L., 2021, s. –.

Comparing CNN-Based Object Detectors on Two Novel Maritime Datasets

Soloviev, V., Farahnakian, F., Zelioli, L., Iancu, B., Lilius, J. & Heikkonen, J., juli 2020, *2020 IEEE International Conference on Multimedia and Expo Workshops, ICMEW 2020*. IEEE, 9106019. (2020 IEEE International Conference on Multimedia and Expo Workshops, ICMEW 2020).

Recursive Task Generation for Scalable SDF Graph Execution on Multicore Processors

Georgakarakos, G. & Lilius, J., mars 2020, *Proceedings 2020 28th Euromicro International Conference on Parallel, Distributed and Network-Based Processing PDP 2020*. IEEE Computer Society Conference Publishing Services (CPS), s. 196-200 9092315. (Proceedings - 2020 28th Euromicro International Conference on Parallel, Distributed and Network-Based Processing, PDP 2020).

A survey of machine learning approaches for surface maritime navigation

Azimi, S., Salokannel, J., Lafond, S., Lilius, J., Salokorpi, M. & Porres, I., 2020, *Maritime Transport VIII: proceedings of the 8th International Conference on Maritime Transport: Technology, Innovation and Research: Maritime Transport '20*. Iniciativa Digital Politècnica, s. 103 117 s.

On the Verification and Validation of AI Navigation Algorithms

Porres, I., Azimi, S., Lafond, S., Lilius, J., Salokannel, J. & Salokorpi, M., 2020, *Global OCEANS 2020*.

Scenario-based Testing of a Ship Collision Avoidance System

Porres, I., Azimi, S. & Lilius, J., 2020, *2020 46th Euromicro Conference on Software Engineering and Advanced Applications (SEAA)*. IEEE, s. 545-552

An efficient model for quantifying the interaction between structural properties of software and hardware in the ARM big.LITTLE architecture

Stepanovic, S., Georgakarakos, G., Holmbacka, S. & Lilius, J., 2019, I: *Concurrency and Computation: Practice and Experience*. s. –

RDF stores for enhanced living environments: An overview

Karvinen, P., Diaz-Rodriguez, N., Grönroos, S. & Lilius, J., 2019, *Enhanced Living Environments: Algorithms, Architectures, Platforms, and Systems*. Ganchev, I., Garcia, N. M., Dobre, C., Mavromoustakis, C. X. & Goleva, R. (red.). Springer, s. 19–52

Efficient task-based code generation for SDF graph execution on multicore processors

Georgakarakos, G. & Lilius, J., 2018, *2018 Conference on Design and Architectures for Signal and Image Processing (DASIP)*. IEEE, s. 112–117

Inactivity Benchmarking

Lund, W. & Lilius, J., 2018, *2018 International Conference on High Performance Computing & Simulation (HPCS)*. Smari Khalid Zine-Dine, W. W. (red.). IEEE, s. 1028–1033

IoT at Sea

Nybom, K., Lund, W., Lafond, S., Lilius, J., Björkqvist, J., Suominen, K. & Tuulos, K., 2018, *2018 IEEE International Symposium on Broadband Multimedia Systems and Broadcasting (BMSB)*. IEEE, s. 1–7 s.

Model-Based Representations for Dataflow Schedules

Bhattacharyya, S. S. & Lilius, J., 2018, *Principles of Modeling: Essays Dedicated to Edward A. Lee on the Occasion of His 60th Birthday*. Springer Verlag, s. 88-105 18 s. (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); vol. 10760 LNCS)(Programming and Software Engineering).

Quantifying the Interaction Between Structural Properties of Software and Hardware in the ARM Big.LITTLE Architecture

Stepanovic, S., Georgakarakos, G., Holmbacka, S. & Lilius, J., 2018, *2018 26th Euromicro International Conference on Parallel, Distributed and Network-based Processing (PDP)*. Merelli, I., Lio, P. & Kotenko, I. (red.). IEEE, s. 138–144

A Method for Automatic Whoosh Sound Description

Chernyi, E., Lilius, J. & Mouromtsev, D., 2017, *Proceedings of the 20th International Conference on Digital Audio Effects (DAFx-17), Edinburgh, UK, September 5–9, 2017*. Torin, A., Hamilton, B., Bilbao, S. & Newton, M. (red.). s. 459–465

Detecting data-parallel synchronous dataflow graphs

Kanur Chandra Shekar, S., Lilius, J. & Ersfolk, J., 2017, *Design and Architectures for Signal and Image Processing (DASIP), 2017 Conference on*. IEEE, s. 67–72

Energy-Awareness and Performance Management with Parallel Dataflow Applications

Holmbacka, S., Noguees, E., Pelcat, M., Lafond, S., Menard, D. & Lilius, J., 2017, I: *Journal of Signal Processing Systems*. 87, 1, s. 33–48

Task-based execution of synchronous dataflow graphs for scalable multicore computing

Georgakarakos, G., Kanur Chandra Shekar, S., Lilius, J. & Desnos, K., 2017, *Signal Processing Systems (SiPS), 2017 IEEE International Workshop on*. IEEE, s. –

Accurate energy modeling for many-core static schedules with streaming applications

Holmbacka, S., Keller, J., Eitschberger, P. & Lilius, J., 2016, I: *Microprocessors and Microsystems*. 43, s. 14–25

A Knowledge Engineering Approach to Computational Creativity in Sound Design

Chernyi, E., Lilius, J., Brusila, J. & Mouromtsev, D., 2016, *Proceedings. 1st Conference on Computer Simulation of Musical Creativity*. Jan, S. & Valerio, V. (red.). University of Huddersfield, s. –

Analysis on scalability and energy efficiency of HEVC decoding using task-based programming model

Georgakarakos, G., Holmbacka, S. & Lilius, J., 2016, *Design and Architectures for Signal and Image Processing (DASIP), 2016 Conference on*. Cerisier, S. & Adam Morawiec, D. (red.). IEEE, s. –

An Approach for Structuring Sound Sample Libraries Using Ontology

Chernyi, E., Lilius, J., Brusila, J., Mouromtsev, D. & Rogozinsky, G., 2016, *Knowledge Engineering and Semantic Web*. Ngonga Ngomo, A-C. & Křemen, P. (red.). Springer, s. 202–214

An Ontology for Wearables Data Interoperability and Ambient Assisted Living Application Development.

Diaz Rodriguez, N., Grönroos, S., Wickström, F., Lilius, J., Eertink, H., Braun, A., Dillen, P., Crowley, J. & Alexandersson, J., 2016, *World Conference on Soft Computing, 2016*. Springer, s. – 5 s.

A Semantic Security Framework and Context-Aware Role-Based Access Control Ontology for Smart Spaces

Hosseinzadeh, S., Virtanen, S., Diaz Rodriguez, N. & Lilius, J., 2016, *SBD '16 Proceedings of the International Workshop on Semantic Big Data*. Groppe, S. & Gruenwald, L. (red.). ACM, s. –

Energy Aware Software: Issues, Approaches and Challenges

Lafond, S., Holmbacka, S. & Lilius, J., 2016, *7th International Green & Sustainable Computing Conference*. Shirazi, B. & Ahmad, I. (red.). IEEE, s. –

Medicine Tray Design and Security for Medication Administration Processes at Hospital Wards.

Ranjita, P., Rodríguez Natalia, D., Riitta, D-O., Hanna, P., Lotta, H., Ilona, T., Sanna, S., Soini, A. & Lilius, J., 2016, *CHI 2016 Tangibles for Health Workshop*. ACM, s. –

Performance-Based Pricing in Multi-Core Geo-Distributed Cloud Computing

Lučanin, D., Pietri, I., Holmbacka, S., Brandic, I., Lilius, J. & Sakellariou, R., 2016, I: *IEEE Transactions on Cloud Computing*. 99, s. –

Accurate Energy Modelling for Many-Core Static Schedules

Holmbacka, S., Keller, J., Eitschberger, P. & Lilius, J., 2015, *Parallel, Distributed and Network-Based Processing (PDP), 2015 23rd Euromicro International Conference on*. O'Conner & Lisa (red.). IEEE, s. 525–532

Actor Merging for Dataflow Process Networks

Boutellier, J., Ersfolk, J., Lilius, J., Mattavelli, M., Roquier, G. & Silvén, O., 2015, I: *IEEE Transactions on Signal Processing*. 63, 10, s. 2496–2508

Analysis and Transcoding Time Prediction of Online Videos

Deneke, T., Lafond, S. & Lilius, J., 2015, *2015 IEEE International Symposium on Multimedia*. Liao, A. Y. H. (red.). IEEE International Symposium on Multimedia, s. 319–322

Analysis and Transcoding Time Prediction of Online Videos

Deneke, T., Lafond, S. & Lilius, J., 2015, *Turku Centre for Computer Science (TUCS)*.

Cost-Efficient, Utility-Based Caching of Expensive Computations in the Cloud

Byholm, B., Jokhio, F., Ashraf, A., Lafond, S., Lilius, J. & Porres Paltor, I., 2015, *23rd Euromicro International Conference on Parallel, Distributed, and Network-Based Processing*. Daneshtalab, M., Aldinucci, M., Leppänen, V., Lilius, J. & Brorsson, M. (red.). IEEE Computer Society Conference Publishing Services (CPS), s. 505–513

Determining a Device Crossover Point in CPU/GPU Systems for Streaming Applications

Kanur Chandra Shekar, S., Lund, W., Tsiopoulos, L. & Lilius, J., 2015, *2015 IEEE Global Conference on Signal and Information Processing (GlobalSIP 2015)*. Moura, J. & Oliver Wu, D. (red.). IEEE Global Conference on Signal and Information Processing, s. 100–106

Execution of dataflow process networks on OpenCL platforms

Lund, W., Kanur Chandra Shekar, S., Ersfolk, J., Tsiopoulos, L., Lilius, J., Haldin, J. & Falk, U., 2015, *Parallel, Distributed and Network-Based Processing (PDP), 2015 23rd Euromicro International Conference on*. Daneshtalab, M., Aldinucci, M., Leppänen, V., Lilius, J. & Brorsson, M. (red.). IEEE, s. 618–625

Integration of Dataflow Components Within a Legacy Video Transcoding Framework

Deneke, T., Morel, L., Lafond, S. & Lilius, J., 2015, *Signal Processing Systems (SiPS), 2015 IEEE Workshop on*. Chakrabarti, C. (red.). IEEE, s. 1–6

Performance Evaluation of Parallel HEVC Strategies

Georgakarakos, G., Tsiopoulos, L., Lilius, J., Haldin, J. & Falk, U., 2015, *Parallel, Distributed and Network-Based Processing (PDP), 2015 23rd Euromicro International Conference on*. Daneshtalab, M., Aldinucci, M., Leppänen, V., Lilius, J. & Brorsson, M. (red.). IEEE, s. 137–144

Performance Monitor Based Power Management for big.LITTLE Platforms

Holmbacka, S., Lafond, S. & Lilius, J., 2015, *N/A*. International conference on high-performance and embedded architectures and compilers, s. –

Safe Motor Controller in a Mixed-Critical Environment with Runtime Updating Capabilities

Gutiérrez-Rivas, J-L., Holmbacka, S., Méndez-Macías, M., Lund, W., Lafond, S., Lilius, J. & Díaz-Alonso, J., 2015, *I: Journal of Universal Computer Science*. 21, 2, s. 177–205

Active Video Games to Promote Physical Activity in Children with Cancer: A Randomized Clinical Trial with Follow-Up

Kauhanen, L., Järvelä, L., M Lähteenmäki, P., Arola, M., J Heinonen, O., Axelin, A., Lilius, J., Vahlberg, T. & Salanterä, S., 2014, *I: BMC Pediatrics*. 14, 94, s. –

A Fuzzy Ontology for Semantic Modelling and Recognition of Human Behaviour

Diaz Rodriguez, N., Cuéllar, M. P., Lilius, J. & Delgado Calvo-Flores, M., 2014, *I: Knowledge-Based Systems*. 66, s. 46–60

A Run-Time Power Manager Exploiting Software Parallelism

Holmbacka, S., Lafond, S. & Lilius, J., 2014, *PACT '14 Proceedings of the 23rd international conference on Parallel architectures and compilation*. s. 471–472 2 s.

A Survey on Ontologies for Human Behaviour Recognition

Diaz Rodriguez, N., P. Cuéllar, M., Lilius, J. & Delgado Calvo-Flores, M., 2014, *I: ACM Computing Surveys*. 46, 4, s. –

A task migration mechanism for distributed many-core operating systems

Holmbacka, S., Fattah, M., Lund, K. W., Rahmani, A-M., Lafond, S. & Lilius, J., 2014, *I: Journal of Supercomputing*. 68, 3, s. 1141–1162 22 s.

Can IT health-care applications improve the medication tray-filling process at hospital wards? An exploratory study using eye-tracking and stress response

Diaz Rodriguez, N., Lilius, J., Danielsson-Ojala, R., Pirinen, H., Kauhanen, L., Salanterä, S., Björklund, S., Majors, J., Rautanen, K., Salakoski, T. & Tuominen, I., 2014, *16th International Conference on E-health Networking, Application & Services (Healthcom)*. Neto, Venâncio, A., de Souza, N. & José (red.). IEEE Computer Society Institute of Electrical and Electronic Engineers, s. 423–428

Cost-Efficient, Utility-Based Caching of Expensive Computations in the Cloud

Byholm, B., Jokhio, F., Ashraf, A., Lafond, S., Lilius, J. & Porres Paltor, I., 2014, *Turku Centre for Computer Science (TUUS)*.

Decoding of DVB-T2 LDPC Codes on a Tile Processor: Optimisations and Performance Comparisons

Kanur Chandra Shekar, S., Grönroos, S., Nybom, K., Björkqvist, J. & Lilius, J., 2014, *Wireless innovation forum conference on wireless communications technologies and software defined radio*. Glossner, J., Hamill, S. & Pucker, L. (red.). The Wireless Innovation Forum, s. 75–85

Energy and Power Management, Measurement and Analysis for Multi-Core Processors

Holmbacka, S., Hällis, F., Lund, K. W., Lafond, S. & Lilius, J., 2014, Turku Centre for Computer Science (TUCS).

Energy Efficiency and Performance Management of Parallel Dataflow Applications

Holmbacka, S., Nogues, E., Pelcat, M., Lafond, S. & Lilius, J., 2014, *The 2014 Conference on Design & Architectures for Signal & Image Processing*. Ana, P. & Adam, M. (red.). ECDI Electronic Chips & Systems design initiative, s. 1–8

Evaluation of CPU Hotplug Latency on Multi-Core ARM Chips

Holmbacka, S. & Lilius, J., 2014, *MCC'14: Seventh Swedish Workshop on Multicore Computing*. Kuchinski, Krzysztof, Gruian & Flavius (red.). Lunds Tekniska Högskola, s. 9–12

Exploiting Smart Spaces for Interactive TV Applications Development

Saleemi, MM., Diaz Rodriguez, N. & Lilius, J., 2014, *I: Journal of Supercomputing*. 70, 3, s. 1200–1217

Handling Real-World Context-Awareness, Uncertainty and Vagueness in Real-Time Human Activity Tracking and Recognition with a Fuzzy Ontology-Based Hybrid Method

Diaz Rodriguez, N., León Cadahía, O., Pegalajar Cuéllar, M., Lilius, J. & DelgadoCalvo-Flores, M., 2014, *I: Sensors*. 14, 10, s. 18131–18171

Modelling Resilience of Data Processing Capabilities of CPS

Laibinis, L., Klionskiy, D., Troubitsyna, E., Dorokhov, A., Lilius, J. & Kupriyanov, M., 2014, *Software Engineering for Resilient Systems*. Majzik, I. & Vieira, M. (red.). Springer, s. 55–70

Monitorizado remoto de ejercicios de rehabilitación en tiempo real con sensores de profundidad 3D y tecnologías semánticas.

Diaz Rodriguez, N., Wikström, R., Grönroos, S., Wickström, F., Karvinen, P., Berg, A., Hosseinzadeh, S., Lilius, J., Cuéllar, MP., Calvo-Flores M, D. & Karppi, M., 2014, *I CNMJI (The National Multidisciplinary Congress of Young Researchers). Granada (Spain)*. Bailón-Moreno, R. (red.). Conference proceedings PDF online, s. 319–319

Power-Aware HEVC Decoding with Tunable Image Quality

Nogues, E., Holmbacka, S., Pelcat, M., Menard, D. & Lilius, J., 2014, *2014 IEEE Workshop on Signal Processing Systems (SiPS)*. John, M. & Maire, ON. (red.). IEEE workshop on signal processing systems, s. 38–44

Semantic and Fuzzy Modelling of Human Behaviour in Smart Spaces. A case study on Ambient Assisted Living and Remote Rehabilitation

Diaz Rodriguez, N., Cuéllar, MP., Lilius, J. & Calvo-Flores M, D., 2014, *I Congreso Nacional Multidisciplinar de Jóvenes Investigadores, I CNMJI (The National Multidisciplinary Congress of Young Researchers). Granada (Spain)*. Bailón-Moreno, R. (red.). Conference proceedings PDF online, s. 346–346

Smart Dosing: A Mobile Application for Tracking the Medication Tray-Filling and Dispensation Processes in Hospital Wards

Khan, NA., Diaz Rodriguez, N., Danielsson-Ojala, R., Pirinen, H., Kauhanen, L., Salanterä, S., Majors, J., Björklund, S., Rautanen, K., Salakoski, T., Tuominen, I., Porres Paltor, I. & Lilius, J., 2014, *6th International Workshop on Intelligent Environments Supporting Healthcare and Well-being (WISHWell'14)*. Augusto, JC. & Wolf, K. (red.). Workshop proceedings in PDF (not online), s. 1–10

Teaching Many-Core Programming

Tsiopoulos, L., Jokhio, F., Georgakarakos, G., Dahlin, A. & Lilius, J., 2014, *10th European Workshop on Microelectronics Education, EWME 2014*. IEEE, s. 7–10

Turku Centre for Computer Science, Annual Report 2013

Laine, I., Lilius, J., Mäntylä, T., Petre, I., Tuohi, O. & Tuominen, I., 2014, Turku Centre for Computer Science (TUCS).

Video Transcoding Time Prediction for Proactive Load Balancing

Deneke, T., Haile, H., Lafond, S. & Lilius, J., 2014, *IEEE International Conference on Multimedia and Expo. Touradj, E., Shipeng, L., Houjun, W. & Jie, Y. (red.)*. IEEE Computer Society Institute of Electrical and Electronic Engineers, s. 1–6

A Computation and Storage Trade-Off Strategy for Cost-Efficient Video Transcoding in the Cloud

Jokhio, F., Ashraf, A., Lafond, S. & Lilius, J., 2013, *Software Engineering and Advanced Applications (SEAA), 2013 39th EUROMICRO Conference on*. Demirors, O. & Turetken, O. (red.). IEEE, s. 365–372

An Approach to Improve Semantics in Smart Spaces Using Reactive Fuzzy Rules

Diaz Rodriguez, N., Lilius, J., P. Cuéllar, M. & Delgado Calvo-Flores, M., 2013, *2013 Joint IFSA World Congress and NAFIPS Annual Meeting (IFSA/NAFIPS 2013)*. Pedrycz, W. & Reformat, MZ. (red.). IEEE, s. 436–441

A Scalable Distributed M3 Platform on a Low-Power Cluster

Berg, A., Karvinen, P., Grönroos, S., Wickström, F., Diaz Rodriguez, N., Hosseinzadeh, S. & Lilius, J., 2013, *Proceedings of the Open International M3 Semantic Interoperability Workshop*. Soininen, J-P., Balandin, S., Lilius, J., Liuha, P. & Salmon Cinotti, T. (red.). TUCS, s. 49–58

Cost-Efficient Dynamically Scalable Video Transcoding in Cloud Computing

Jokhio, F., Ashraf, A., Lafond, S., Porres Paltor, I. & Lilius, J., 2013, Turku Centre for Computer Science (TUCS).

Extending Semantic Web Tools for Improving Smart Spaces Interoperability and Usability

Diaz Rodriguez, N., Lilius, J., Pegalajar Cuéllar, M. & Delgado Calvo-Flores, M., 2013, *Distributed Computing and Artificial Intelligence, 10th International Conference*. Omatu, S., Neves, J., Corchado, JM., Paz Santana JF, D. & González S, R. (red.). Springer, s. 45–52

Introduction to Cloud Computing Technologies

Ashraf, A., Hartikainen, M., Hassan, U., Heljanko, K., Lilius, J., Mikkonen, T., Porres Paltor, I., Syeed, M. & Tarkoma, S., 2013, *Developing Cloud Software: Algorithms, Applications, and Tools*. Porres, I., Mikkonen, T. & Ashraf, A. (red.). TUCS general publications, s. 1–41

Lightweight Framework for Runtime Updating of C-Based Software in Embedded Systems

Holmbacka, S., Lund, W., Lafond, S. & Lilius, J., 2013, *Presented as part of the 5th Workshop on Hot Topics in Software Upgrades*. Usenix : the advanced computing systems association, s. –

M3 Interoperability for Remote Rehabilitation with Kinect

Diaz Rodriguez, N., Grönroos, S., Wickström, F., Karvinen, P., Berg, A., Hosseinzadeh, S., Karppi, M. & Lilius, J., 2013, *Proceedings of the Open International M3 Semantic Interoperability Workshop*. Soininen, J-P., Balandin, S., Lilius, J., Liuha, P. & Salmon Cinotti, T. (red.). TUCS, s. 153–163

Modeling Control Tokens for Composition of CAL Actors

Ersfolk, J., Roquier, G., Lilius, J. & Mattavelli, M., 2013, *Design and Architectures for Signal and Image Processing (DASIP), 2013 Conference on*. Morawiec, A. & Hinderscheit, J. (red.). IEEE, s. 71–78

Parallel Decoder for Low Density Parity Check Codes: A MPSoC Study

Kanur Chandra Shekar, S., Georgakarakos, G., Siirilä, A., Lagravière, J., Nybom, K., Lafond, S. & Lilius, J., 2013, *High Performance Computing and Simulation (HPCS), 2013 International Conference on*. Smari, WW. & Zeljkovic, V. (red.). IEEE, s. 202–206

Power Optimized Many-Cores with User Centric Notion of Parallelism

Holmbacka, S., Lafond, S. & Lilius, J., 2013, *Sixth Swedish Workshop on Multicore Computing*. Nordström, T. & Abdin, Z. (red.). Swedish Multicore Initiative, s. –

Prediction-Based Dynamic Resource Allocation for Video Transcoding in Cloud Computing

Jokhio, F., Ashraf, A., Lafond, S., Porres Paltor, I. & Lilius, J., 2013, *Parallel, Distributed and Network-Based Processing (PDP), 2013 21st Euromicro International Conference on*. Kilpatrick, Peter, Milligan, Stotzka & Rainer (red.). IEEE, s. 254–261 8 s.

Proactive Virtual Machine Allocation for Video Transcoding in the Cloud

Jokhio, F., Ashraf, A., Deneke, T., Lafond, S., Porres Paltor, I. & Lilius, J., 2013, *Developing Cloud Software: Algorithms, Applications, and Tools*. Porres, I., Mikkonen, T. & Ashraf, A. (red.). TUCS general publications, s. 113–143

QoS Manager for Energy Efficient Many-Core Operating Systems

Holmbacka, S., Ågren, D., Lafond, S. & Lilius, J., 2013, *Parallel, Distributed and Network-Based Processing (PDP), 2013 21st Euromicro International Conference on*. Kilpatrick, Peter, Milligan, Stotzka & Rainer (red.). IEEE, s. 318–322 5 s.

Rapid Prototyping of Semantic Applications in Smart Spaces with a Visual Rule Language

Diaz Rodriguez, N., Lilius, J., Pegalajar Cuéllar, M. & Delgado Calvo-Flores, M., 2013, *UbiComp '13 Adjunct Proceedings of the 2013 ACM conference on Pervasive and ubiquitous computing adjunct publication*. Häkkilä, J., Whitehouse, K., Krüger, A., Tobe, Y., Hilliges, O., Yatani, K., Dey, AK., Gellersen, H., Huang, EM., Ojala, T., Santini, S. & Mattern, F. (red.). ACM, s. 1335–1338

Static and Quasi-static Compositions of Stream Processing Applications from Dynamic Dataflow Programs

Ersfolk, J., Roquier, G., Lund, K. W., Mattavelli, M. & Lilius, J., 2013, *2013 IEEE International Conference on Acoustics, Speech, and Signal Processing Proceedings*. IEEE, s. 2620–2624 5 s.

Stream-Based Admission Control and Scheduling for Video Transcoding in Cloud Computing

Ashraf, A., Jokhio, F., Deneke, T., Lafond, S., Porres Paltor, I. & Lilius, J., 2013, *Cluster, Cloud and Grid Computing (CCGrid), 2013 13th IEEE/ACM International Symposium on*. Balaji, Pavan, Epema, Dick, Fahringer & Thomas (red.). IEEE, s. 482–489 8 s.

Task Migration for Dynamic Power and Performance Characteristics on Many-Core Distributed Operating Systems

Holmbacka, S., Lund, K. W., Lafond, S. & Lilius, J., 2013, *Parallel, Distributed and Network-Based Processing (PDP), 2013 21st Euromicro International Conference on*. Kilpatrick, P., Milligan, P. & Stotzka, R. (red.). IEEE, s. 310–317 8 s.

Thermal Influence on the Energy Efficiency of Workload Consolidation in Many-Core Architectures

Hällis, F., Holmbacka, S., Lund, K. W., Slotte, R., Lafond, S. & Lilius, J., 2013, *Digital Communications - Green ICT (TIWDC), 2013 24th Tyrrhenian International Workshop on*. Bolla, Raffaele, Davoli, Franco, Tran-Gia, Phuoc, Anh & Trinh, T. (red.). IEEE, s. 1–6 6 s.

Turku Centre for Computer Science, Annual Report 2012

Laine, I., Lilius, J., Mäntylä, T., Petre, I., Tuohi, O. & Tuominen, I., 2013, *Turku Centre for Computer Science (TUCS)*.

Understanding Movement and Interaction: An Ontology for Kinect-Based 3D Depth Sensors

Diaz Rodriguez, N., Wikström, R., Lilius, J., Pegalajar Cuéllar, M. & Delgado Calvo-Flores, M., 2013, *Ubiquitous Computing and Ambient Intelligence. Context-Awareness and Context-Driven Interaction - 7th International Conference, UCAMi 2013, Carrillo, Costa Rica, December 2-6, 2013, Proceedings*. Bravo, J., Ochoa, S., Urzaiz, G., Chen, LL. & Oliveira, J. (red.). Springer, s. 254–261

Bit Rate Reduction Video Transcoding with Distributed Computing

Jokhio, F., Deneke, T., Lafond, S. & Lilius, J., 2012, *Proceedings of the 20th Euromicro International Conference on Parallel, Distributed and Network-Based Computing*. Rainer, S., Michael, S. & Yiannis, C. (red.). IEEE, s. 206–212

Ontology Driven Smart Space Application Development

Saleemi, MM., Rodríguez N, D., Suenson, E., Lilius, J. & Porres Paltor, I., 2012, *Semantic Interoperability: Issues, Solutions, and Challenges*. Pileggi, SF. & Fernandez-Llatas, C. (red.). River publishers, s. 101–125

Optimizing Off-Chip Memory Access Costs in Low Power MPEG-4 Decoder

Habli, H., Ersfolk, J., Lilius, J., Westerlund, T. & Nurmi, J., 2012, *3rd International Conference on Information and Communication Systems*. ACM Press, s. – 5 s.

SCHEDULING OF DYNAMIC DATAFLOW PROGRAMS BASED ON STATE SPACE ANALYSIS

Ersfolk, J., Roquier, G., Lilius, J. & Mattavelli, M., 2012, *2012 IEEE International Conference on Acoustics, Speech and Signal Processing*. IEEE, s. 1661–1664 4 s.

Towards Ontology-Driven Development of Ubiquitous and Intelligent interactive TV Applications

Saleemi, MM., Rodríguez N, D. & Lilius, J., 2012, *The 10th IEEE International Conference on Pervasive, Intelligence and Computing (PiCom 2012)*. Yau, SS., Pedrycz, W. & Piuri, V. (red.). IEEE, s. –

A Framework for Context-Aware Applications for Smart Spaces

Mohsin Saleemi, M., Díaz Rodriguez, N., Lilius, J. & Porres Paltor, I., 2011, *Smart Spaces and Next Generation Wired/Wireless Networking - 11th International Conference, NEW2AN 2011, and 4th Conference on Smart Spaces, ruSMART 2011, St. Petersburg, Russia, August 22-25, 2011. Proceedings*. Balandin, S., Koucheryavi, Y. & H, H. (red.). Springer, s. 14–25

Analysis of an RVC-CAL MPEG-4 Simple Profile Decoder

Jokhio, F., Dahlin, A., Ersfolk, J. & Lilius, J., 2011, Turku Centre for Computer Science (TUCS).

Analysis of Video Segmentation for Spatial Resolution Reduction Video Transcoding

Jokhio, F., Deneke, T., Lafond, S. & Lilius, J., 2011, *Intelligent Signal Processing and Communications Systems (ISPACS), 2011 International Symposium on*. Sa-ngiamsak, C., Okada, M., Adiono, T. & Chalidabhongse, T. (red.). IEEE, s. 1–6

Analysis of Video Transcoding on Multi-Core Platform

Jokhio, F., Deneke, T., Lafond, S. & Lilius, J., 2011, *Fourth Swedish Workshop on Multi-Core Computing MCC-2011*. Kessler, C. (red.). ACM, s. –

A PID-Controlled Power Manager for Energy Efficient Web Clusters

Holmbacka, S., Lafond, S. & Lilius, J., 2011, *Dependable, Autonomic and Secure Computing (DASC), 2011 IEEE Ninth International Conference on*. Chen, J., W, D., Liu, J., Yang L, T. & J, M. (red.). IEEE, s. 721–728

A System Level Power Management for Web Clusters

Lafond, S., Holmbacka, S., Lilius, J., Pierson, J. (red.) & Hlavacs, H. (red.), 2011, IRIT Institut de Recherche en Informatique de Toulouse.

Cost and Energy Reduction Evaluation for ARM Based Web Servers

Svanfeldt-Winter, O., Lafond, S. & Lilius, J., 2011, *Dependable, Autonomic and Secure Computing (DASC), 2011 IEEE Ninth International Conference on*. Chen, J., W, D., Liu, J., Yang L, T. & J, M. (red.). IEEE, s. 480–487

End-User's Service Composition in Ubiquitous Computing using SmartSpace Approach

Mohsin Saleemi, M. & Lilius, J., 2011, *Proceedings of the Sixth International Conference on Internet and Web Applications and Services*. Fries, S., Matskin, M. & Ortiz, G. (red.). Iaria xps press, s. 214–221

Framework for Smart Space Application Development

Kaustell, A., Mohsin Saleemi, M., Rosqvist, T., Jokiniemi, J., Lilius, J. & Porres Paltor, I., 2011, *Proceedings of the International Workshop on Semantic Interoperability*. Flavio Pileggi, S. (red.). SCITEPRESS Digital Library, s. 3–12

Interfacing and Scheduling Legacy Code within the Canals Framework

Dahlin, A., Jokhio, F., Lilius, J., Gorin, J. & Raulet, M., 2011, *Design and Architectures for Signal and Image Processing (DASIP), 2011 Conference on*. Morawiec, A., Hinderscheit, J. & Ghenassia, O. (red.). IEEE, s. 1–8

OWL Web Ontology Language as a Scripting Language for Smart Space Applications.

Suenson, E., Lilius, J. & Porres Paltor, I., 2011, *Rule-Based Reasoning, Programming, and Applications - 5th International Symposium, RuleML 2011 – Europe, Barcelona, Spain, July 19-21, 2011. Proceedings*. Bassiliades, N., Governatori, G. & Paschke, A. (red.). Springer, s. 368–375

Power Proportional Characteristics of an Energy Manager for Web Clusters

Holmbacka, S., Lafond, S. & Lilius, J., 2011, *Embedded Computer Systems (SAMOS), 2011 International Conference on*. Carro, L. & Pimentel, A. (red.). IEEE, s. 51–58

Programming Biomedical Smart Space Applications with BiImageXD and PythonRules

Diaz Rodriguez, N., Kankaanpää, P., Mohsin Saleemi, M., Lilius, J. & Porres Paltor, I., 2011, *SWAT4LS '11 4th Int. Workshop on Semantic Web Applications and Tools for Life Sciences*. Paschke, A., Burger, A., Romano, P., Marshall, MS. & Splendiani, A. (red.). ACM, s. 10–11

Scheduling of dynamic dataflow programs with model checking

Ersfolk, J., Roquier, G., Jokhio, F., Lilius, J. & Mattavelli, M., 2011, *Signal Processing Systems (SiPS), 2011 IEEE Workshop on*. IEEE, s. 37–42 6 s.

System Level Power Management for Many-Core Systems

Holmbacka, S., Smeds, J., Lafond, S. & Lilius, J., 2011, *Workshop on Micro Power Management for Macro Systems on Chip*. Springer, s. –

A Tool for Efficient Combination and Evaluation of Reusable Design Assets

Ersfolk, J., Lilius, J., Lundkvist, T. & Porres Paltor, I., 2010, Turku Centre for Computer Science (TUCS).

Evaluation of the Energy Efficiency of ARM Based Processors for Cloud Infrastructure

Svanfeldt-Winter, O., Lafond, S. & Lilius, J., 2010, Turku Centre for Computer Science (TUCS).

Interactive Applications for Mobile TV

Mohsin Saleemi, M. & Lilius, J., 2010, *Multimedia Computing and Information Technology (MCIT), 2010 International Conference on*. IEEE, s. 37–40

Model-Based Testing using System vs. Test Models - What is the Difference?

Malik, Q., Jääskeläinen, A., Virtanen, H., Katara, M., Abbors, F., Truscan, D. & Lilius, J., 2010, *2010 17th IEEE International Conference and Workshops on the Engineering of Computer-Based Systems*. Sterritt, R., Eames, B. & Sprinkle, J. (red.). IEEE, s. 291–299

Requirement-Driven Scenario-Based Testing Using Formal Stepwise Development

Malik, Q. A., Laibinis, L., Truscan, D. & Lilius, J., 2010, *I: International Journal on Advances in Software*. 3, 1 & 2, s. 147–160

Rialto 2.0: A Language for Heterogeneous Computations

Lilius, J., Dahlin, A. & Lionel, M., 2010, *Distributed, Parallel and Biologically Inspired Systems*. et al., H. M. (red.). Springer, s. 7–18

Using UML Models and Formal Verification in Model-Based Testing

Malik, Q., Truscan, D. & Lilius, J., 2010, *17th IEEE Intl. Conference on Engineering of Computer-Based Systems (ECBS 2010)*. IEEE, s. –

Analysis of Memory Access Optimization for Motion Compensation Frames in MPEG-4

Habli, H., Lilius, J. & Ersfolk, J., 2009, *System-on-Chip, 2009. SOC 2009. International Symposium on*. Nurmi, J., Takala, J. & Vainio, O. (red.). IEEE, s. 114–117 4 s.

A Semantic Transformation from UML Models to Input for the Qtronic Test Design Tool

Abhors, F., Pääjärvi, T., Teittinen, R., Truscan, D. & Lilius, J., 2009, Turku Centre for Computer Science (TUCS).

A Software Based Implementation of the DVB-T2 Bit Interleaved Coding and Modulation Transmission Chain

Nybom, K., Sandqvist, J., Soininen, T., Björkqvist, J. & Lilius, J., 2009, Turku Centre for Computer Science (TUCS).

Configurable Video Decoding in a Dataflow Language

Dahlin, A., Ersfolk, J., Yang, G. & Lilius, J., 2009, *Proceedings of the 2009 Conference on Design and Architectures for Signal and Image Processing (DASIP '09)*. Mattaveli, M. & Morawiec, A. (red.). s. –

Content Scheduling in Multimedia Interactive Mobile Games

Mohsin Saleemi, M., Nybom, K., Björkqvist, J. & Lilius, J., 2009, I: *Loading....* 3, 5, s. –

Design Complexity Management in Embedded System Design

Ersfolk, J., Lilius, J., Muurinen, J., Salomäki, A., Fors, N. & Nylund, J., 2009, *Proceedings of the 2nd International Workshop on Model Based Architecting and Construction of Embedded Systems (ACES-MB 2009)*. Baelen S, V., Weigert, T., Ober, I. & Espinoza, H. (red.). CEUR-WS.org, s. 93–106

MDE for Soc Design

Truscan, D., Lundkvist, T., Alanen, M., Sandström, K., Porres Paltor, I. & Lilius, J., 2009, I: *Innovations in Systems and Software Engineering*. 5, 1, s. 49–64

Memory Analysis of Low Power MPEG-4 Decoder Architecture

Dahlin, A., Ersfolk, J., Habli, H. & Lilius, J., 2009, *Embedded Software and Systems, 2009. ICCESS '09. International Conference on*. IEEE Computer Society, s. 231–237 7 s.

Scenario-based Test Case Generation Using Event-B Models

Malik, Q. A., Lilius, J. & Laibinis, L., 2009, *Advances in System Testing and Validation Lifecycle, 2009. VALID '09. First International Conference on*. IEEE Computer Society, s. 31–37

The Canals Language and its Compiler

Dahlin, A., Ersfolk, J., Yang, G., Habli, H. & Lilius, J., 2009, *SCOPES '09: Proceedings of th 12th International Workshop on Software and Compilers for Embedded Systems*. ACM, s. 43–52

Tracing Requirements in a Model-Based Testing Approach

Abbors, F., Truscan, D. & Lilius, J., 2009, *Advances in System Testing and Validation Lifecycle, 2009. VALID '09. First International Conference on*. Amirhossein, A., Anne, M. & Manuela, P. (red.). IEEE Computer Society, s. 123–128

Transformational Support for Model-Based Testing – from UML to QML

Abbors, F., Pääjärvi, T., Teittinen, R., Truscan, D. & Lilius, J., 2009, *Workshop on Model-based Testing in Practice*. Bauer, T., Eichler, H., Rennoch, A. & Wieczorek, S. (red.). Fraunhofer focus, s. 55–64

Using System Models vs. Test Models in Model-Based Testing

Malik, QA., Jääskeläinen, A., Virtanen, H., Katara, M., Abbors, F., Truscan, D. & Lilius, J., 2009, *Proceedings of "Opiskelijoiden minikonferenssi" at "Tietotekninen tuki ohjelmoinnin opetuksessa"*. s. –

A Content Scheduling Algorithm for Multimedia Interactive Mobile Games

Mohsin Saleemi, M., Nybom, K., Björkqvist, J. & Lilius, J., 2008, *Turku Centre for Computer Science (TUCS)*.

A Model-Based Design Process for the SegBus Distributed Architecture

Truscan, D., Seceleanu, T., Lilius, J. & Tenhunen, H., 2008, *Proceedings of 15th Annual IEEE International Conference and Workshop on the Engineering of Computer Based Systems (ecbs 2008)*. IEEE Computer Society, s. 307–316

A Testing Framework for NOTA-Based Devices

Karlå, M., Truscan, D., Lilius, J., Porres Paltor, I., Eriksson, T. & Hurskainen, M., 2008, *Proceedings of 1st Workshop on Model-based Testing in Practice (MoTIP'08)*. s. –

Energy efficiency analysis of multi MPEG-4 decoder systems

Lafond, S., Boutellier, J., Lilius, J. & Silven, O., 2008, *Multimedia on Mobile Devices*. Creutzburg, Reiner, Takala & Jarmo (red.). s. – 10 s.

Generating Test Cases from Scenario-Based Formal Development

Malik, Q. A., Lilius, J. & Laibinis, L., 2008, Turku Centre for Computer Science (TUUS). 40 s.

Interactive Applications for Mobile TV

Saleemi, MM. & Lilius, J., 2008, *Workshop on Towards New Forms of iTV User Experience@ 6th EuroITV Conference 2008*. s. –

Interrupt costs in embedded system with short latency hardware accelerators

Lafond, S. & Lilius, J., 2008, *15th Annual IEEE International Conference and Workshop on the Engineering of Computer Based Systems, Proceedings*. Bustard, David, W., Sterritt & Roy (red.). International conference and workshops on engineering of computer-based systems, s. 317–325 9 s.

Model-based Testing Using Scenarios and Event-B Refinements

A Malik, Q., Lilius, J. & Laibinis, L., 2008, *Methods, Models and Tools for Fault Tolerance*. Butler CJAR, M. & Troubitsyna, E. (red.). Springer, s. 177–195

NoTA (Sub)System Specification Guidelines

Karlå, M., Lilius, J., Lindqvist, J., Porres Paltor, I., Truscan, D., Eriksson, T., Latva-Aho, A. & Rakkola, J., 2008, Turku Centre for Computer Science.

Online Testing of the ÅBOT Game Server Using the Qtronic Tool

Liu, X., Truscan, D. & Lilius, J., 2008, Turku Centre for Computer Science.

SystemC-based Simulation of the MICAS Architecture

Truscan, D., Sandström, K., Lilius, J. & Porres Paltor, I., 2008, *Embedded Systems Specification and Design Languages*. Villar, E. (red.). Springer, s. 87–103

Testable Specifications of NoTA-Based Modular Embedded Systems

Truscan, D., Lindqvist, J., Lilius, J., Porres Paltor, I., Eriksson, T., Rakkola, J. & Latva-Aho, A., 2008, *Proceedings of 15th Annual IEEE International Conference and Workshop on the Engineering of Computer Based Systems (ecbs 2008)*. IEEE Computer Society, s. –

The Canals Language and its Compiler

Dahlin, A., Ersfolk, J., GYH, H. & Lilius, J., 2008, Turku Centre for Computer Science.

A Communication Methodology for Interactive Location-Based Mobile Games

Nybom, K., Kempe, J., Mohsin Saleemi, M., Björkqvist, J. & Lilius, J., 2007, *Workshop on Interactive Applications for Mobile TV*. s. –

Energy consumption analysis for two embedded Java virtual machines

Lafond, S. & Lilius, J., 2007, I: *Journal of Systems Architecture*. 53, 5-6, s. 328–337 10 s.

Model-based Testing Using Scenarios and Event-B Refinements

Malik, Q. A., Lilius, J. & Laibinis, L., 2007, *Workshop on Methods, Models and Tools for Fault Tolerance, Proceedings*. Butler, M., Jones, C., Romanovsky, A. & Troubitsyna, E. (red.). s. 59–69

Protocol Processor Design Issues

Truscan, D., Virtanen, S. & Lilius, J., 2007, *Processor Design - System-On-Chip Computing for ASICs and FPGAs*. Nurmi & Jari (red.). Springer, s. 257–285

Software Platform for Mobile TV

Mohsin Saleemi, M., Björkqvist, J. & Lilius, J., 2007, *Workshop on Interactive Applications for Mobile TV @ 5th EuroITV Conference 2007*. s. –

SystemC-based Simulation of the MICAS Architecture

Lilius, J., Porres Paltor, I., Sandström, K. & Truscan, D., 2007, *Proceedings of the Forum on specification and Design Languages (FDL 2007)*. s. –

Testable specifications of NoTA-based modular embedded systems

Lilius, J., Lindqvist, J., Porres Paltor, I., Truscan, D., Eriksson, T., Latva-Aho, A. & Rakkola, J., 2007, Turku Centre for Computer Science (TUCS).

Towards a Design Methodology for Multiprocessor Platforms

Truscan, D., Seceleanu, T., Tenhunen, H. & Lilius, J., 2007, *31st Annual International Computer Software and Applications Conference (COMPSAC 2007)*. IEEE Computer Society, s. 575–578

Towards a Formal Definition of Model Driven Development

Lilius, J. & Oliver, I., 2007, Turku Centre for Computer Science (TUCS). 15 s.

An energy consumption model for an embedded Java virtual machine

Lafond, S. & Lilius, J., 2006, *Architecture of Computing Systems - ARCS 2006: 19th International Conference, Frankfurt/Main, Germany, March 13-16, 2006. Proceedings*. Grass, W. & Sick Klaus Waldschmidt, B. (red.). s. 311–325
15 s.

An Energy Consumption Model for Java Virtual Machine

Lafond, S. & Lilius, J., 2006, *Architecture of Computing Systems - ARCS 2006*. Grass, W., Sick, B. & Waldschmidt, K. (red.). Springer, s. 311–325

A System-level Framework for Designing and Evaluating Protocol Processor Architectures

Virtanen, S., Nurmi, T., Paakkulainen, J. & Lilius, J., 2006, I: *International Journal of Embedded Systems*. 1, 1-2, s. 78–90

Design Method Support for Domain Specific SoC Design

Alanen, M., Lilius, J., Porres Paltor, I., Truscan, D., Oliver, I. & Sandström, K., 2006, *Proceedings of the 3rd International Workshop on Model-Based Methodologies for Pervasive and Embedded Software (MOMPES 2006)*. IEEE, s. –

Formal Service-Oriented Development of Fault Tolerant Communicating Systems

Laibinis, L., Troubitsyna, E., Leppänen, S., Lilius, J. & Malik, Q., 2006, Turku Centre for Computer Science.

Formal Service-Oriented Development of Fault Tolerant Communicating Systems

Laibinis, L., Troubitsyna, E., Leppänen, S., Lilius, J. & Malik, Q., 2006, *Rigorous Development of Complex Fault-Tolerant Systems*. Springer Berlin / Heidelberg, s. 261–287

Integration of DFDs Into a UML-Based Model-Driven Engineering Approach

Fernandes, JM., Lilius, J. & Truscan, D., 2006, I: *Software and Systems Modeling*. 5, 4, s. 403–428

Rialto 2.0: A Language for Heterogenous Computing

Lilius, J. & Morel, L., 2006, Turku Centre for Computer Science.

Static energy saving through multi-bank memory architecture

Lafond, S. & Lilius, J., 2006, *Proceedings of the International Conference on Embedded Computer Systems: Architectures, Modeling, and Simulation, 2006*. Gaydadjiev, Georgi, Glossner, John, Takala, Jarmo, Vassiliadis & Stamatis (red.). IEEE Computer Society Institute of Electrical and Electronic Engineers, s. 43–49 7 s.

Synthesis of Scenario Based Test Cases from B Models

Satpathy, M., Malik, QA. & Lilius, J., 2006, *Formal Approaches to Software Testing and Runtime Verification, First Combined International Workshops FATES 2006 and RV 2006 Seattle, WA, USA, August 15-16, 2006 Revised Selected Papers*. Havelund, K., Núñez, M., Rosu, G. & Wolff, B. (red.). Springer, s. 133–147

A MOF-Based Metamodel for SA/RT

Isaksson, J., Lilius, J. & Truscan, D., 2005, *Rapid Integration of Software Engineering Techniques (RISE'04)*. Guelfi, N. (red.). Springer, s. 102–111

An Architecture Exploration Environment for System on Chip Design

Lilius, J., Lillqvist, T., Lundkvist, T., Oliver, I., Porres Paltor, I., Sandström, K., Sveholm, G. & Zaka, AP., 2005, I: *Nordic Journal of Computing*. 12, 4, s. 361–378

Code Generation for Embedded Systems

Björklund, D., Lilius, J. & Porres Paltor, I., 2005, *Model Driven Engineering for Distributed Real-time Embedded Systems*. Gérard, S., Babau, J-P. & Champeau, J. (red.). Hermes Science Publications, s. –

Formal Model-Driven Development of Communicating Systems

Laibinis, L., Troubitsyna, E., Leppänen, S., Lilius, J. & Malik, Q., 2005, *Formal Methods and Software Engineering : 7th International Conference on Formal Engineering Methods, ICFEM 2005*. Lau, K. & Banach, R. (red.). Springer, s. 188–203

Formal Model-Driven Development of Communicating Systems

Laibinis, L., Troubitsyna, E., Leppänen, S., Lilius, J. & Malik, Q., 2005, Turku Centre for Computer Science (TUCS).

Formal Service-Oriented Development of Fault Tolerant Communicating Systems

Laibinis, L., Troubitsyna, E., Leppänen, S., Lilius, J. & Malik, Q., 2005, *Proceedings of the Workshop on Rigorous Engineering of Fault-Tolerant Systems (REFT 2005)*. Butler, M., Jones, C., Romanovsky, A. & Troubitsyna, E. (red.). School of Computing Science, University of Newcastle upon Tyne, s. 2–11

Highly Automated FPGA Synthesis of Application-Specific Protocol Processors

Virtanen, S., Truscan, D., Paakkulainen, J., Isoaho, J. & Lilius, J., 2005, *Field Programmable Logic and Applications, 2005. International Conference on*. Rissa, T., Wilton, S. & Leong, P. (red.). IEEE, s. 269–274

On Modeling Techniques for Supporting Model Driven Development of Protocol Processing Applications

Alanen, M., Lilius, J., Porres Paltor, I. & Truscan, D., 2005, *Model-Driven Software Development*. Beydeda, S., Book, M. & Gruhn, V. (red.). Springer, s. 305–328

Selected Papers of the 2nd International Workshop on Model-Based Methodologies for Pervasive and Embedded Software (MOMPES 2005)

Lilius, J. (red.), Machado, RJ. (red.), Truscan, D. (red.), Fernandes, JM. (red.) & Porres Paltor, I. (red.), 2005, *Nordic Journal of Computing*.

The MICAS Tool

Lilius, J., Lillqvist, T., Lundkvist, T., Oliver, I., Porres Paltor, I., Sandström, K., Sveholm, G. & Pervez Zaka, A., 2005, *Proceedings of the NWUML'2005: The 3rd Nordic Workshop on UML and Software Modeling*. Koskimies, Kai, Kuzniarz, Ludwik, Nummenmaa, Jyrki, Zhang & Zheyang (red.). Tampere University Press, s. 180–192

Using Feature Models to Automate Model Transformations

Lilius, J. & Truscan, D., 2005, *Proceedings of the Forum on Specification and Design Languages (FDL'05)*. s. –

A Brunch from the Coffee Table - Case Study in NoC Platform Design

Ahonen, T., Virtanen, S., Kylliäinen, J., Truscan, D., Sigüenza-Tortosa, D., Paakkulainen, J., Ristimäki, T., Kasanko, T., Nurmi, T., Isännäinen, H., Saastamoinen, I., Lilius, J., Nurmi, J. & Isoaho, J., 2004, *Interconnect-Centric Design for Advanced SoC and NoC*. Nurmi, J., Tenhunen, H., Isoaho, J. & Jantsch, A. (red.). Kluwer Academic publishers, s. –

A Unified Approach to Code Generation from Behavioral Diagrams

Björklund, D., Lilius, J. & Porres Paltor, I., 2004, *Languages for System Specification*. Grimm & Christoph (red.). Kluwer Academic publishers, s. 21–34

Functional and Object-Oriented Views in Embedded Software Modeling

Fernandes, JM. & Lilius, J., 2004, *Proceedings of the 11th IEEE International Conference and Workshop on the Engineering of Computer Based Systems (ECBS 2004)*. IEEE computer society press, s. –

MDE Support in a Protocol Processing Design Method

Alanen, M., Lilius, J., Porres Paltor, I. & Truscan, D., 2004, *Proceedings of Model-Driven Architecture: Foundations and Applications 2004, June 10-11, Linköping, Sweden*. Reseach Center for Intergrational Software Engineering, s. –

Model Driven Engineering: A Position Paper

Alanen, M., Lilius, J., Porres Paltor, I. & Truscan, D., 2004, *Proceedings of the 1st International Workshop on Model-Based Methodologies for Pervasive and Embedded Software (MOMPES'04)*. Fernandes, JM., Lilius, J., Machado, RJ. & Porres, I. (red.). Turku Centre for Computer Science, s. –

Rialto to B: An Exercise in Formal Development of a Language for Multiple Models of Computation

Björklund, D. & Lilius, J., 2004, *Fourth International Conference on Application of Concurrency to System Design*. IEEE Computer Society, s. –

Tool Support for DFD-UML Model-Based Transformations

Truscan, D., Fernandes, JM. & Lilius, J., 2004, *Engineering of Computer-Based Systems, 2004. Proceedings*. Dvorak MS, V. (red.). IEEE Computer Society, s. –

A MOF-Based Metamodel for SA/RT

Isaksson, J., Truscan, D. & Lilius, J., 2003, Turku Centre for Computer Science (TUCS).

An Implementation of Escape Analysis for Java

Munsin, J. & Lilius, J., 2003, Turku Centre for Computer Science (TUCS).

A Workbench to Experiment on New Model Engineering Applications

Back, R-J., Björklund, D., Lilius, J., Milovanov, L. & Porres Paltor, I., 2003, *UML 2003 - The Unified Modeling Language. Modeling Languages and Applications*. Stevens, P. (red.). Springer, s. 96–100

Fast Evaluation of Protocol Processor Architectures for IPv6 Routing

Lilius, J., Truscan, D. & Virtanen, S., 2003, *Proceedings of Design, Automation, and Test in Europe 2003 (DATE'03)*. IEEE Computer Society, s. 158–163

Memory Usage Estimation of Java Programs

Enqvist, H. & Lilius, J., 2003, Turku Centre for Computer Science (TUCS).

Realizing a Model Driven Engineering Process

Alanen, M., Lilius, J., Porres Paltor, I. & Truscan, D., 2003, Turku Centre for Computer Science (TUCS). 27 s.

Region Based Allocation in Java

Enqvist, H. & Lilius, J., 2003, Turku Centre for Computer Science (TUCS).

Rethinking Software Updating; Concepts for Improved Updatability

Österberg, D. & Lilius, J., 2003, Turku Centre for Computer Science (TUCS). 107 s.

Rialto Profile in the SMW Toolkit

Björklund, D., Lilius, J. & Porres Paltor, I., 2003, *Proceedings of the Third International Conference on Application of Concurrency to System Design ACSD 2003*. IEEE Computer Society, s. 233–234

SystemC Simulation Framework of Protocol Processing Architectures for IPv6 Routing

Truscan, D., Virtanen, S. & Lilius, J., 2003, *The International Symposium on Signals, Circuits and Systems SCS 2003*. IEEE, s. 309–312

TACO IPv6 Router - a Case Study in Protocol Processor Design

Virtanen, S., Truscan, D. & Lilius, J., 2003, Turku Centre for Computer Science (TUCS). 56 s.

The Uva Virtual Machine

Österberg, D. & Lilius, J., 2003, Turku Centre for Computer Science (TUCS).

Tool Support for DFD to UML Model-Based Transformations

Truscan, D., Miguel Fernandes, J. & Lilius, J., 2003, Turku Centre for Computer Science (TUCS).

UML-driven TTA-based protocol processor design

Lilius, J. & Truscan, D., 2003, Turku Centre for Computer Science (TUCS). 36 s.

A Design Tool for the TACO Protocol Processor Development Framework

Virtanen, S., Lundström, T. & Lilius, J., 2002, *Proceedings of the 20th IEEE Norchip Conference*. s. –

A Language for Multiple Models of Computation

Björklund, D. & Lilius, J., 2002, *Proceedings of the Tenth International Symposium on Hardware/Software Codesign*. ACM Press, s. 25–30

From UML Behavioral Descriptions to Efficient Synthesizable VHDL

Björklund, D. & Lilius, J., 2002, *Proceedings of the 20th IEEE Norchip Conference*. s. –

Region Based Allocation in Java

Enqvist, H. & Lilius, J., 2002, *Proceedings of the Proceedings of the Nordic workshop on Software Development Tools and Techniques. NWPER 2002*. Østerbye, K. (red.). s. –

TACO: Rapid Design Space Exploration for Protocol Processors

Virtanen, S., Lilius, J., Nurmi, T. & Westerlund, T., 2002, *The Ninth IEEE/DATC Electronic Design Processes Workshop Notes*. s. –

Towards a Kernel Language for Heterogenous Computing

Björklund, D. & Lilius, J., 2002, *Design Automation and Test in Europe 2002 (DATE 2002)*. Delgado Kloos, C. & da Franca, J. (red.). IEEE Computer Society, s. –

UML-driven TTA-based protocol processor design

Lilius, J. & Truscan, D., 2002, *Proceedings of the 2002 Forum on Design and Specification Languages*. s. –

Efficient verification of a class of time Petri nets using linear programming

Xuandong, L. & Lilius, J., 2001, *Information Processing Letters*. 77, 5-6, s. 219–224

SystemC Based Object Oriented System Design

Virtanen, S., Truscan, D. & Lilius, J., 2001, *Fourth International Forum on Design Languages (FDL'01)*. s. –

The TACO Protocol Processor Simulation Environment

Virtanen, S. & Lilius, J., 2001, *Proceedings of the Ninth International Symposium on Hardware/Software Codesign*. IEEE, s. 201–206

Towards Efficient Code Synthesis from Statecharts

Björklund, D., Lilius, J. & Porres Paltor, I., 2001, *Practical UML-based rigorous development methods - countering or integrating the extremists, workshop of the puml-group held together with the UML 2001, October 1st, 2001 in Toronto*.

Canada. Evans, A., France, R. B., D. Moreira, A. M. & Rumpe, B. (red.). GI, s. 29–41

A causal semantics for time Petri nets

Aura, T. & Lilius, J., 2000, I: *Theoretical Computer Science*. 243, 1-2, s. 409–447

An Expandable Protocol Processor Architecture

Virtanen, S. & Lilius, J., 2000, *EDA-Träff 2000*. s. – 5 s.

A Processor Architecture for the TACO Protocol Processor Development Framework

Virtanen, S., Lilius, J. & Westerlund, T., 2000, *Proceedings of the 18th IEEE Norchip Conference*. s. 204–211

Checking Compositions of UML Sequence Diagrams for Timing Inconsistency

Xuandong, L. & Lilius, J., 2000, Turku Centre for Computer Science. 20 s.

Checking Compositions of UML Sequence Diagrams for Timing Inconsistency

Xuoandong, L. & Lilius, J., 2000, *Proceedings of 7th Asia Pacific Software Engineering Conference*. IEEE Computer Society, s. 154–161

Defining precise semantics for UML

Bruel, J-M., Lilius, J., Moreira, A. & France, R. B., 2000, *Object-oriented technology - ECOOP'2000 Workshop Reader*. Malenfant, J., Moisan, S. & Moreira, A. (red.). Springer, s. 113–122

The Production Cell: An Exercise in the Formal Verification of a UML Model

Lilius, J. & Porres Paltor, I., 2000, *Proceedings of the Thirty-Third Annual Hawaii International Conference on System Sciences*. Sprague, R. H. (red.). IEEE Computer Society, s. –

A programmable general protocol processor - a proposal for an expandable architecture

Virtanen, S., Isoaho, J., Westerlund, T. & Lilius, J., 1999, *URSI/IEEE XXIV Convention on Radio Science*. Valtaoja, E. & Wiik, K. (red.). s. 112–113

Checking time petri nets for linear duration properties

Xuandong, L. & Lilius, J., 1999, *Petri Nets and Performance Models (PNPM'99)*. IEEE Computer Society, s. 218–227

Checking Timing Petri Nets for Linear Duration Properties

Xuandong, L. & Lilius, J., 1999, Turku Centre for Computer Science (TUCS). 19 s.

Digital Sound Recorder: A Case Study On Designing Embedded Systems Using the UML Notation

Porres Paltor, I. & Lilius, J., 1999, Turku Centre for Computer Science (TUCS). 34 s.

Formalising UML State Machines for Model Checking

Lilius, J. & Porres Paltor, I., 1999, *UML'99 The Unified Modeling Language*. Springer, s. 430–445

OB(PN)² : An Object Based Petri Net Programming Notation

Lilius, J., 1999, Turku Centre for Computer Science (TUCS). 33 s.

The Production Cell: An Exercise in the Formal Verification of a UML Model

Lilius, J. & Porres Paltor, I., 1999, Turku Centre for Computer Science (TUCS). 20 s.

The Semantics of UML State Machines

Lilius, J. & Porres Paltor, I., 1999, Turku Centre for Computer Science (TUCS). 20 s.

Timing Analysis of Message Sequence Charts

Xuandong, L. & Lilius, J., 1999, Turku Centre for Computer Science (TUCS). 28 s.

Timing analysis of UML sequence diagrams

Xuandong, L. & Lilius, J., 1999, *UML'99 - The Unified Modeling Language. Beyond the Standard*. France, Robert, B., Rumpe & Bernhard (red.). Springer, s. 661–674

Timing Analysis of UML Sequence Diagrams

Xuandong, L. & Lilius, J., 1999, Turku Centre for Computer Science (TUCS). 16 s.

Verifying Time Petri Nets by Linear Programming

Xuandong, L. & Lilius, J., 1999, Turku Centre for Computer Science (TUCS). 14 s.

vUML: a Tool for Verifying UML Models

Lilius, J. & Porres Paltor, I., 1999, Turku Centre for Computer Science (TUCS). 14 s.

vUML: A Tool for Verifying UML Models

Lilius, J. & Porres Paltor, I., 1999, *The 14th IEEE International Conference on Automated Software Engineering*. IEEE Computer Society, s. 255–258

Efficient State Space Search for Time Petri Nets

Lilius, J., 1998, I: *Electronic Notes in Theoretical Computer Science*. 18, s. 113–133

Partial Order Reductions for Timed Systems

Bengtsson, J., Jonsson, B., Lilius, J. & Wang, Y., 1998, *CONCUR'98 Concurrency Theory - 9th International Conference Nice, France, September 8–11, 1998 Proceedings*. Sangiorgi, D. & de Simone, R. (red.). s. 485–500

Time Processes for Time Nets

Aura, T. & Lilius, J., 1997, *Application and Theory of Petri Nets 1997*. Springer, s. 136–155