Curriculum Vitae

Prof. Dr. Leandro Soares Indrusiak

Personal Data:

Born in Santa Maria, Brazil, on February 14, 1974. Holds Brazilian, German, and British citizenship.

Academic Background:

Doctor Engineer (Dr.-Ing.) in Computer Science (2000-2001 at UFRGS, 2001-2003 at TU Darmstadt)
Jointly issued by the Informatics Institute of the Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil, and the Electrical Engineering and Information Technology Department of the Technische Universität Darmstadt, Darmstadt, Germany. Awarded grade: A (scale from A to D, being A the highest).
Supervisors: Prof. Dr. Dr. h. c. mult. Manfred Glesner, Prof. Dr. Ricardo Reis

Master in Computer Science (1996-1998, 4-semester programme)
Informatics Institute of the Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil. Awarded grade: A (scale from A to D, being A the highest).
Supervisor: Prof. Dr. Ricardo Reis

Bachelor in Electrical Engineering (1991-1995, 10-semester degree programme)
Engineering School of the Federal University of Santa Maria (UFSM), Santa Maria, Brazil.

Current Position:

Professor of Distributed Systems – School of Computer Science, University of Leeds, Leeds, UK (2023-present).

Honorary Visiting Professor - Computer Science Department, University of York, York, UK (2023-present).

Past Positions:

Reader – Computer Science Department, University of York, York, UK (2016-2023).

Senior Lecturer (Associate Professor) – Computer Science Department, University of York (2012-2016).

Lecturer (Tenured Assistant Professor) – Computer Science Department, University of York (2008-2012).

Research Fellow (Wissenschaftlicher Mitarbeiter BAT 1b) and Teaching Fellow (Lehrbeauftragter) - Institute of Microelectronic Systems, Technische Universität Darmstadt, Darmstadt, Germany (2003-2008).

Research Staff (Wissenschaftlicher Mitarbeiter BAT 2a) - Institute of Microelectronic Systems, Technische Universität Darmstadt (2001-2003).

Assistant Professor - Informatics Department, Pontifical Catholic University of Rio Grande do Sul (PUCRS), Uruguaiana, Brazil (1998-2001).

CNPq Scholarship Holder - Graduate Program in Computer Science, UFRGS, Porto Alegre, Brazil (1996-1998).

Part-time positions held during studies: IT consultant (1996-1998), technical support to internet services (1995-1996), teaching assistant in digital circuits (1994-1995).

Teaching Activities:

As a lecturer at the School of Computer Science, University of Leeds, UK:

- master-level modules: Advanced Software Engineering (lectures and labs for ca. 100 students, 2023-present)
- undergraduate modules: Computer Systems & Architecture (labs for ca. 300 students, 2024-present)

As a lecturer at the Computer Science Department, University of York, UK:

- undergraduate lectures: Embedded Systems Design and Implementation (ca. 55 students, 2010-present), Information & Network Security (ca. 100 students, 2022-present), Operating Systems and Networking (ca. 180 students, 2018-2020), Theory of Computation (ca. 80 students, 2008-2009)
- master-level lectures: Networks & Communications Security: Threats, Attacks & Countermeasures (ca. 100 students, 2022-present), Embedded Systems Design and Implementation (ca. 10 students, 2021-present), Advanced Programming Concepts (25 students, 2016) Cloud Computing (2 students, 2015), Systems & Networking (ca. 20 students, 2012-2016), Operating Systems for Information Technology (ca. 20 students, 2009-2011)
- summer schools for visiting students: Introduction to Internet-of-Things (ca. 30 students, 2021-present)

As a visiting lecturer:

- Multiprocessors and Models of Computation, Federal University of Rio Grande do Sul - UFRGS, Porto Alegre, Brazil (9 students, 15 hours, Aug-Sep 2014, funded by Capes “PVE - International Visiting Professor” programme, in Portuguese)
- Multiprocessors and Models of Computation, Universidad Politecnica de Madrid, Spain (15 students, 15 hours, May 2013, in English)
- Multiprocessor Embedded Systems, Universität Bremen, Germany (ca. 20 students, 30 hours, Apr-May 2012, funded by Universität Bremen’s “Internationalisation at Home” programme, in English)
- Actor-oriented design, University of Montpellier II, France (ca. 25 students, 30 hours, Dec. 2005, in English)
- Introduction to actor-oriented design, Tallinn University of Technology, Estonia (ca. 35 students, 6 hours, Oct. 2006, in English)

As Teaching Fellow (Lehrbeauftragter) at the Institute of Microelectronic Systems, Technische Universität Darmstadt, Germany:

- Lecture: Multiprocessor Systems-on-Chip Design Automation (in English, ca. 20 students, 2007-2008)
- Graduate Seminars: System-on-Chip Design (in English language, ca. 15 students, 2002-2008), Fortgeschrittene Entwurfsverfahren für Mikroelektronische Systeme (Advanced Design Methods for Microelectronic Systems, in English and German, ca. 20 students, 2004-2007)
- Short Seminar: Embedded Java (in English, ca. 20 students and trainees, 2001)

As Assistant Professor at the Informatics Department, Pontifical Catholic University of Rio Grande do Sul (PUCRS), Uruguaiana, Brazil (all in Portuguese):

- Undergraduate Lectures: Programming Paradigms and Languages (ca. 40 students, 1998-2000), Database Management Systems (ca. 40 students, 1998-2000), System Modeling and Simulation (ca. 40 students, 1998-2000), Software Engineering I (ca. 40 students, 1998-2000), Computer Graphics (ca. 20 students, 1998)
- Undergraduate Lab: Object Oriented Programming – Java (ca. 20 students, 1999-2000)
- Graduate Lecture: Advanced object-oriented analysis and design (ca. 25 students, 2000)

Academic Administration Activities:

REF Lead – School of Computer Science, University of Leeds, UK (2023-).

Member of the Research and Innovation Committee - School of Computer Science, University of Leeds, UK (2023-).

Director – Doctoral Centre for Safe, Ethical and Secure Computing, University of York, UK (2021-2023).

Group Leader – Real Time Distributed Systems Research Group - Department of Computer Science, University of York, UK (2021-2023).

Member of the Graduate School Board – Department of Computer Science, University of York, UK (2021-2023).

Member of the Promotions Committee - Faculty of Sciences, University of York, UK (2021-2023).

Member of Departmental Research Committee - Department of Computer Science, University of York, UK (2019-2023).

Member of the Board – Faculty of Sciences, University of York, UK (2017-2019).

Internationalisation Coordinator - Department of Computer Science, University of York, UK (2008-2021).

Member of Research Computing Working Group - University of York, UK (2017-2021).

Member of the Masters Teaching Committee - Department of Computer Science, University of York, UK (2010-2016).

Programme Leader - Master Programme in Information Technology, Department of Computer Science, University of York, UK (2010-2016).

Programme Leader - Master Programme in Computing, Department of Computer Science, University of York, UK (2010-2016).

Member of International Strategy Group - University of York, UK (2010-2012).

Programme Leader - Master Programme in Software Engineering, Department of Computer Science, University of York, UK (2010-2012).

Programme Coordinator - International Master Program in Information and Communication Engineering, Department of Electrical Engineering and Communication Technology, Technische Universität Darmstadt, Germany (2001-2008).

Research Interests:

Real-time systems and networks, distributed embedded systems, on-chip multiprocessing, energy-efficient computing, cyber-physical systems, cloud and high-performance computing, resource allocation problems in computing, manufacturing and transportation.

Research Projects:

Enhancing real-time performance in digital communications using machine learning (2025-2029).

Responsibilities: principal investigator, supervising a PhD student working on machine learning models to improve timeliness and reliability in wireless communication and internet-of-things. Funded by ARDC (Ref 1308, 153kGBP).

Identifying and Optimising Worst-Case Latency Bounds in On-Chip Network Interconnects (2024-2028).

Responsibilities: principal investigator, supervising a PhD student working in collaboration with Arm and University of Pisa on real-time analysis models for on-chip interconnects. Funded by EPSRC and Arm Ltd. (Industrial Cooperative Awards in Science & Engineering - ICASE, 143kGBP).

SAFIRE - Cloud-based Situational Analysis for Factories providing Real-time Reconfiguration Services (2016-2019).

Responsibilities: principal investigator, workpackage leader in a consortium composed by 7 industrial and academic partners (ATB Bremen, York, IKERLAN, Electrolux, OAS AG, ONA S.A., The Open Group), working on cloud-based optimisation engines. Funded by EU H2020 (Ref 723634, 3.1MEUR EU contribution, 400kGBP to York).

MCCps – Mixed Criticality Cyber Physical Systems (2016-2019).

Responsibilities: co-investigator, supervising a post-doc researcher working on time-predictable and mixed-criticality wireless networks. Funded by EPSRC - Engineering and Physical Sciences Research Council (Ref EP/P003664/1, 990kGBP).

DreamCloud – Dynamic Resource Allocation in Embedded and High-Performance Computing (2013-2016).

Responsibilities: principal investigator, technical leader of a consortium composed by 7 industrial and academic partners (York, CNRS, Bosch, aicas GmbH, RheonMedia Ltd, HLRS Stuttgart, The Open Group), working on time-predictable heuristics for dynamic resource management in multiprocessor systems. Funded by EU FP7 (Ref 611411, 2.87MEUR EU contribution, 403kGBP to York).

MCC – Mixed Criticality Embedded Systems on Many-Core Platforms (2013-2016).

Responsibilities: co-investigator, supervising a post-doc researcher working on time-predictable Networks-on-Chip architectures, simulation and emulation. Funded by EPSRC - Engineering and Physical Sciences Research Council (Ref EP/K011626/1, 652kGBP).

LowPowNoC - Evaluation and reduction of power dissipation in multicore systems based on Networks-on-Chip (2011-2013).

Responsibilities: principal investigator, leading a post-doc researcher and PhD students working on system-level techniques to estimate and optimise power dissipation in Networks-on-Chip. Funded by EPSRC - Engineering and Physical Sciences Research Council (Ref EP/J003662/1, 100kGBP).

T-CREST - Time-predictable Multi-Core Architecture for Embedded Systems (2011-2013).

Responsibilities: project partner on a consortium with 8 European organisations (York, TU Wien, TU Denmark, TU Eindhoven, AbsInt, GMV, Intecs, The Open Group), working on the development of time-predictable interconnect architectures and memory hierarchies for embedded systems. Funded by EU FP7 (Ref 288008, 2.65MEUR EU contribution).

MADES - Model-based Methods and Tools for Avionics and Surveillance Embedded Systems (2010-2012).

Responsibilities: project partner on a consortium with 6 European organisations (York, Softeam, Cassidian, TXT e-solutions, Politecnico di Milano, The Open Group) working on model-based design of embedded systems using UML/MARTE and virtualisation techniques. Funded by EU FP7 (Ref 248864, 2.4MEUR EU contribution).

Mapping heuristics for time-predictable multi-core platforms based on Networks-on-Chip (2010-2011).

Responsibilities: principal investigator, in cooperation with the Institute of Microelectronic Systems, TU Darmstadt. Funded by British Council (4kGBP).

TEMPO - Time Driven Modelling and Resource Management of Real-Time Systems on Multiprocessor Systems-on-Chip (2009-2013).

Responsibilities: co-investigator, contributing to modelling, analysis and simulation of MPSoC platforms based on Networks-on-Chip. Funded by EPSRC - Engineering and Physical Sciences Research Council (Ref EP/G055548/1, 622kGBP).

MPSoCMap - Application Modelling and Mapping onto Multiprocessor System-on-Chip Platforms (2009-2011)**.**

Responsibilities: principal investigator, leading a group of doctoral and master students on evaluation of mapping heuristics for multiprocessor platforms based on Networks-on-Chip. In cooperation with the Institute of Microelectronic Systems, TU Darmstadt. Funded by DFG - German Research Foundation (Ref IN 159/1-1, 120kEUR).

Communication-centric Dynamically Reconfigurable Integrated Systems (2006-2008).

Responsibilities: project manager (7+ people group), overseeing researchers working on the application of dynamic reconfiguration and communication-centric System-on-Chip design on different application domains, such as computer vision and multimedia. Funded by VITRONIC GmbH (24kEUR/year), Fujitsu Microelectronics Europe GmbH (1 M.Sc. scholarship), DAAD Procope Project (7kEUR/year) and a CNPq/DAAD doctoral scholarship (ca. 16kEUR/year).

Hardware-Software Interfaces for Heterogeneous Wireless Sensor Networks (2004-2008).

Responsibilities: research group leader on the area of hardware/software interfacing and system modelling, working on operating systems and programming models for sensor networks composed of heterogeneous and reconfigurable nodes. Supported by a DAAD doctoral scholarship (ca. 16kEUR/year) and associated to the SPP 1148 Reconfigurable Computer Systems program funded by DFG (German Research Foundation).

Embedded SoCs for Ubiquitous Computing Environments (2003-2008).

Responsibilities: research group leader on the area of hardware/software interfacing and system modelling. Funded/supported by DAAD, DFG, MENSR under the frame of the DFH German-French research programs, Xilinx, Mirabilis Design and CISCEA (ca. 20kEUR/year + software donations).

Online educational infrastructure (2002-2008).

Responsibilities: development manager and principal programmer (4 people group). Develop and lead the development of online educational tools including exercises and self-correcting tests dynamically assembled out of a database of questions; coordinate the development of the online FPGA lab and integration with Ptolemy II simulation framework. Funded/supported by DAAD, Computational Engineering Research Center (in 2003, 6kEUR), European Commission Leonardo Project VET-TREND (from 2006, 24kEUR/year) and TU Darmstadt - “Initiative für gute Lehre” (from 2007, ca 72kEUR/year).

DInCAD - Distributed Internet-based CAD Methods for Future Complex Microelectronic Systems (1999-2003).

Responsibilities: development management and principal programmer (5+ people group). Funded by Center for Research Funding (CNPq), BMBF - German Ministry of Education and Research (ca. 8kEUR/year).

Other Grants:

Internet-of-Things Lab 2024 – Funding for 27 LoRa nodes (Lilygo 868MHz, Heltec 433 MHz), Yagi antennas, SDR transceivers (HackRF One) and power supplies (3kGBP).

SDR Transceivers for University of York Wireless Society 2022 – Funding for three software-defined radio transceivers (FlexRadio 6400 and two HackRF One), power supply, antenna and cabling (4kGBP).

Laidlaw Scholarship 2017 – Funding of a summer research internship by Will Gardner on improving analysis of transactional memory traffic in multicore processor networked interconnects (6kGBP).

HiPEAC Collaboration Grant 2016 – Funding for a research internship by Rosh Mendis at National Taiwan University, hosted by Tei-Wei Kuo (5kEUR).

Interdepartmental Sandpit 2012 – Pump priming fund for feasibility study on dynamic resource management in wireless sound sensor networks, including 18 motes and sound sensors – joint application with F. Polack, D. Chesmore and P. Mitchell (14kGBP).

York Seedcorn Award 2011 – Funding for international cooperation with University of Karlsruhe and University of Bremen: Enabling the Design of Adaptive and Power-Efficient Multicore Embedded Systems (2kGBP).

York Rapid Response Fund 2010 – Funding for the creation of a lab for wireless sensor network design, including 30 motes, sensor boards, data acquisition boards (6.6kGBP).

EPSRC Vacation Bursary 2010 - Mapping of Dataflow Applications onto Multicore Platforms. Student: Emma Brownbill (2.5kGBP).

Summer Internships for IIT Students 2009 – SystemC simulation of application-specific load over a Network-on-Chip. Intern: Ritej Bachhawat, IIT Kharagpur (2kGBP).

Language Skills:

Portuguese (native proficiency), English (full professional proficiency), Spanish (full professional proficiency), German (basic proficiency, Zertifikat Deutsch CEFR level B1).

Awards and Distinctions:

Department Learning and Teaching Award - Engaging Lecturer (winner), Excellence in Teaching and Learning (nominated), Department of Computer Science, University of York, 2020.

Best Presentation Award, Manufacturing track, 10th International Conference on Manufacturing Science and Technology (ICMST), 2019.

Best Paper Award, Embedded and Cyber-Physical Systems track, Design Automation and Test in Europe Conference (DATE), 2018.

Best Paper Award, 12th International Symposium on Reconfigurable and Communication-Centric Systems-on-Chip (ReCoSoC), 2017.

Best Paper Award, 19th IEEE International Symposium on Real-Time Distributed Computing (ISORC), 2016.

Best Student Paper Award (with H. R. Mendis), 13th International Conference on Signal Processing and Multimedia Applications (SIGMAP), 2016.

Outstanding Paper Award, 23rd International Conference on Real-Time Networks and Systems (RTNS), 2015.

Best Paper Shortlist, 5th Brazilian Symposium on Computing Systems Engineering (SBESC), 2015.

Best Paper Award, 9th International Symposium on Reconfigurable and Communication-Centric Systems-on-Chip (ReCoSoC), 2014.

Elevation to Senior Member, IEEE, 2013.

Shortlisted for the Vice-Chancellor's Teaching Award, University of York, 2013.

Best Paper Award, 3rd IEEE International Conference on Networked Embedded Systems for Enterprise Applications (NESEA), 2012.

Nominated to the University of York's Supervisor of the Year Award, 2011.

Best Paper Award, category "Digital domain", 22nd Symposium on Integrated Circuits and Systems Design (SBCCI), 2009.

Preis für Internationalität 2005, awarded by the "Carlo und Karin Giersch-Stiftung an der TU Darmstadt", 2005.

Outstanding Paper Award, 15th Symposium on Integrated Circuits and Systems Design (SBCCI), 2002.

Top Ten Best Papers, International Conference on Web-Based Modelling and Simulation (WEBSIM), 1999.

Other Academic Activities:

Membership in Technical Societies, Groups and Networks:

- IFIP Working Group 10.5, 2012-present
- European Network on High Performance and Embedded Architecture and Compilation (HiPEAC), 2015-present
- IEEE Industrial Electronics Society, Technical Committee (TC05) on Education in Engineering and Industrial Technologies, 2010-present

Advisory Board Membership:

- ADMORPH EU H2020 Project, University of Amsterdam, Netherlands, 2019-2023
- CREDES - Centre of Research Excellence in Dependable Embedded Systems, Tallinn University of Technology, Estonia, 2009-2012

Editorial Activities:

- Associate Editor, ACM Transactions on Cyber-Physical Systems (ISSN 2378-9638), 2018 – present
- Associate Editor, Journal of Systems Architecture: Embedded Software Design (ISSN 1383-7621), 2012-2018
- Guest Editor, Journal of Systems Architecture: Embedded Software Design (ISSN 1383-7621), 59 (7), 2013, special issue on Network-enabled Many-core Embedded Systems
- Editorial Board Member, International Journal of Embedded and Real-Time Communication Systems (ISSN 1947-3176), 2011-2016
- Guest Editor, International Journal of e-Collaboration (ISSN 1548-3673), 2007
- Contributor, ACM Computing Reviews (ISSN 1530-6586), 2002-present

Review of Research Funding:

- Peer Review College member, EPSRC - Engineering and Physical Sciences Research Council, UK (since 2012)
- Grants Committee member, ARDC foundation - Amateur Radio Digital Communications, USA (2022-2024, reviewed 177 grant proposals over three funding cycles)
- Estonian Research Council, Estonia (2018)
- Research Promotion Foundation, Cyprus (2010)
- Innovation and Technology Commission, Hong Kong SAR Government (2009)

Conference Organization and Program Committees:

- International Conference on Real-Time Networks and Systems (RTNS): 2013-2014, 2025-present (PC Member)
- Reconfigurable Communication-centric Systems-on-Chip (ReCoSoC): 2005-2020 (Steering Committee Member), 2006 (Program Chair), 2011 (Program Co-Chair), 2012 (General Chair), 2019 (General Chair)
- IEEE/ACM Int. Conference on Design Automation and Test in Europe (DATE): 2008-2015, 2018-2020 (PC Member)
- IEEE Real-Time Systems Symposium (RTSS): 2017-2018 (PC Member)
- IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS): 2015 (PC Member)
- Euromicro Conference on Real-Time Systems (ECRTS): 2016 (PC Member)
- International Workshop on Real-Time Networks (RTN): 2016-2018 (PC Member)
- Symposium on Integrated Circuits and Systems Design (SBCCI): 2022 (Track Co-chair), 2016 (Program Co-Chair), 1997 (Organization Committee Member, Website Administrator)
- Dynamic Resource Management in Embedded, High-Performance and Cloud Computing (DREAMCloud): 2014-2016 (General Chair)
- IEEE Computer Society Annual Symposium on VLSI (ISVLSI): 2013 (Program Co-Chair)
- Int. System-on-Chip Symposium (SoC): 2013 (Program Co-Chair), 2006-2014 (Reviewer)
- IFIP VLSI-SoC Conference: 2012-present (PC Member), 2003 (Local Co-chair), 1997 (Organization Committee Member, Website Administrator)
- SPIE Europe Microtechnologies Conference on VLSI Circuits and Systems (EMT): 2009 (Program Co-Chair)
- IEEE Int. Symposium on Industrial Embedded Systems: 2007-2008 (PC Member), 2008 (Program Chair)
- IEEE International Workshop on Factory Communication Systems (WFCS): 2018-present (PC Member)
- IEEE Norchip Conference: 2007-2014 (PC Member)
- ECSI Forum on Design Languages (FDL): 2010-2013 (PC Member)
- FPGAworld: 2010-2013 (PC Member)
- Challenges in Collaborative Engineering (CCE): 2004-2008 (PC Member), 2006 (Program Chair), 2007 (General Co-Chair)

Hosted Academic Visitors:

Ricardo Pezzuol Jacobi, from Universidade de Brasilia, Brazil (2019-2020).

Wagner Ishizaka Penny, from Universidade Federal de Pelotas, Brazil (2018-2019).

Gustavo Künzel, from Universidade Federal do Rio Grande do Sul, Brazil (2018-2019).

João Loureiro, from Instituto Politecnico do Porto, Portugal (2016).

Lisane Brisolara, from Universidade Federal de Pelotas, Brazil (2014-2015).

Paulo Ferreira Jr, from Universidade Federal de Pelotas, Brazil (2014-2015).

Borislav Nikolic, from Instituto Politecnico do Porto, Portugal (2014).

Luciano Copello Ost, from Pontifical Catholic University of Rio Grande do Sul (2009) and University of Montpellier, France (2013).

Supervision:

Post-doctoral Researchers

Dr James Harbin, mixed-criticality cyber-physical systems (2016-2019), mixed-criticality Networks-on-Chip (2013-2016), modelling and evaluation of timing and power in Networks-on-Chip (2012-2013).

Dr Piotr Dziurzanski, dynamic resource allocation heuristics in embedded and high-performance computing (2014-2015, 2017-2019).

Dr Shuai Zhao, high performance and cloud computing (2018-2019).

Dr Michal Przewozniczek, evolutionary optimisation (2019).

Dr Rob Davis, optimisation of fitness functions for time-predictable systems (2018-2019).

Dr Jerry Swan, cloud-based evolutionary optimisation (2017-2018).

Dr Amit Kumar Singh, dynamic resource allocation heuristics in embedded and high-performance computing (2014-2016).

Dr Jose Miguel Montanana Aliaga, multi-stream video processing on FPGA platforms (2015-2016).

Dr Andrew Burkimsher, dynamic resource allocation heuristics in high-performance computing (2014-2015).

Doctoral Theses

Ana Markovic – Locality-Aware Scheduling of Software Repository Mining Workflows in Heterogeneous Environments (University of York, 2021-2025). Co-supervised with Prof Dimitris Kolovos. Examined by Dr Antonio Garcia-Dominguez and Dr. Rami Bahsoon (University of Birmingham).

Thamer Alrefai - Performance-Predictable Resource Management of Container-based Genetic Algorithm Workloads in Cloud Infrastructure (University of York, 2017-2023). Examined by Prof Dimitris Kolovos and Prof Michael Short (University of Teeside).

Yunfeng Ma – Hardware-accelerated Evolutionary Hard Real-Time Task Mapping for Wormhole Network-on-Chip with Priority-Preemptive Arbitration (University of York, 2012-2018). Examined by Prof Alan Burns and Dr Wim Vanderbauwhede (University of Glasgow).

Hasham Roshantha Mendis – Dynamic Resource Management of Network-on-Chip Platforms for Multi-stream Video Processing (University of York, 2012-2017). Examined by Dr Christopher Crispin-Bailey and Prof Bashir Al-Hashimi (University of Southampton).

Hashem Ghazzawi – Feedback Admission Control for Workflow Management Systems (University of York, 2009-2016). Co-supervised with Dr Iain Bate. Examined by Prof Jon Timmis and Dr Paul Ezhilchelvan (Newcastle University).

Bharath Sudev – Improving Packet Predictability of Scalable Network-on-Chip Designs without Priority Pre-emptive Arbitration (University of York, 2012-2016). Examined by Prof Neil Audsley and Prof Tanya Vladimirova (University of Leicester).

M. Norazizi Sham Mohd Sayuti – Early Design Space Exploration of Hard Real-Time Embedded Networks-on-Chip (University of York, 2011-2014). Examined by Prof Neil Audsley and Dr Bjoern Franke (University of Edinburgh).

Andrew Burkimsher – Fair, Responsive Scheduling of Engineering Workflows on Computing Grids (University of York, 2009-2014). Co-supervised with Dr Iain Bate. Examined by Prof Alan Burns and Dr Rizos Sakellariou (University of Manchester).

Ipek Çalişkanelli - A Bio-inspired Load Balancing Technique for Wireless Sensor Networks. (University of York, 2010-2014). Examined by Dr Iain Bate and Dr Utz Roedig (Lancaster University).

Leandro Heleno Möller - Communication Infrastructure Modeling of Many-Core Architectures. (TU Darmstadt, 2006-2011). Informally supervised with Prof M. Glesner.

Luciano Copello Ost. System-level Specification and Design Space Exploration of Networks-on-Chip. (PUCRS, 2006-2010). Co-supervised with Prof F. Moraes.

Current Doctoral Students

Miguel Boing - Machine learning models to support timeliness and reliability optimisation in wireless communications (University of Leeds, 2025-).

Yue Zhu – Identifying and optimising worst-case latency bounds in on-chip network interconnects (University of Leeds, 2024-).

Andras Pinter - Communication schedule and network management optimisation in adaptive IoT deployments (University of York, 2020-).

Master Projects

Eakansh. Cloud-based Genetic Algorithm Implementation using Microservices. 2024. (M.Sc. in Advanced Computer Science) – University of Leeds.

Huihui Xu. Data Analytics and Machine Learning for HF Radio Communications. 2024. (M.Sc. in Advanced Computer Science) – University of Leeds.

Zhijian Lu. Game of Evolutionary Life. 2024. (M.Sc. in Advanced Computer Science) – University of Leeds.

George W. Bray. Design and Implementation of a Virtual Automotive Hardware Security Module. 2020. (M.Eng. in Computer Science) - University of York.

Ryan Smith. Comparing Metaheuristics for Task Mapping over Real-Time Networks-on-Chip. 2019. (M.Eng. in Computer Science) - University of York.

James Harrison. FPGA design and implementation of a priority-arbitrated Network-on-Chip router. 2019. (M.Eng. in Computer Science) - University of York.

Sam Watkins. Genetic Algorithms for Task Mapping over Real-Time Networks-on-Chip: Priority Assignment and Optimisation. 2018. (M.Eng. in Computer Science) - University of York.

Liya Paskaleva. Task Mapping over Mixed-Criticality Networks-on-Chip. 2018. (M.Eng. in Computer Science with Embedded Systems Engineering) - University of York.

Connor Yoh. Genetic Algorithms for Real-Time Network-on-Chip Optimization: supporting reconfigurable cores. 2018. (M.Eng. in Computer Science with Embedded Systems Engineering) - University of York.

Lloyd Still. Genetic Algorithms for Task Mapping over Real-Time Networks-on-Chip: Memory Optimisation. 2017. (M.Eng. in Computer Science) - University of York.

Bart Platak. Performance Analysis of a UAV Remote Vision-assisted Guidance Module. 2017. (M.Eng. in Computer Systems and Software Engineering) - University of York.

Andrei-Costin Zisu. FPGA-based hardware acceleration for FastSLAM. 2017. (M.Eng. in Computer Science with Embedded Systems Engineering) - University of York.

Miguel Boland. Optimisation and comparative analysis of genetic algorithms for indoor localisation. 2017. (M.Eng. in Computer Science with Artificial Intelligence) - University of York.

Oliver Lea. An Evaluation of Evolutionary Models for Task Mapping over Real-Time Heterogeneous Network-on-Chips. 2017. (M.Eng. in Computer Science) - University of York.

Anthony Williams. Benchmarks for multi and many-core systems. 2016. (M.Eng. in Computer Science) - University of York.

James Dipper. Simulating Auction Style Resource Allocation in Cloud Computing. 2015. (M.Sc. in Information Technology) - University of York.

Henri Normak. Acoustic localisation in wireless sensor networks using Mote Runner. 2015. (M.Eng. in Computer Science with Embedded Systems Engineering) - University of York.

Ross Brown. Simulation of video processing algorithms using Ptolemy II. 2015. (M.Eng. in Computer Science with Embedded Systems Engineering) - University of York.

Ashley Coombs. Network-on-Chip Simulation Visualisation. 2015. (M.Eng. in Computer Science) - University of York.

Andrew Faulkner. Altruistic and egoistic behaviour in wireless sensor networks. 2014. (M.Eng. in Computer Science with Embedded Systems Engineering) - University of York.

Adam Fahie. Using Wireless Sensor Networks to Produce Music. 2014. (M.Eng. in Computer Systems and Software Engineering) - University of York.

Anthony Free. Simultaneous Localisation and Mapping for Mobile Robotics. 2014. (M.Eng. in Computer Systems and Software Engineering) - University of York.

Hanwen Zhang. Simulating resource allocation mechanisms in Cloud Computing. 2013. (M.Sc. in Information Technology) - University of York.

Steven Fisher. Heuristics for dynamic mapping of tasks in multicore systems. 2013. (M.Eng. in Computer Systems and Software Engineering) - University of York.

Daniel Baark. Iterative linear programming as an optimisation method for buyer resources in online auctions evaluated using a Java-based Monte-Carlo simulation. 2012. (M.Sc. in Information Technology) - University of York.

Paris Mesidis. Mapping of Real-time Applications on Network-on-Chip based MPSoCs. 2012. (M.Sc. by Research in Computer Science) - University of York.

Adrian Racu. Static Scheduling of Tasks in Large Multicore Systems Using Evolutionary Computation Techniques. 2012. (M.Eng. in Computer Systems and Software Engineering) – University of York.

Mohammed Omar. A Web Interface for In-home Monitoring using Wireless Sensor Networks and Mote Runner. 2012. (M.Eng. in Computer Systems and Software Engineering) – University of York.

Brian Wong. Exploring Multi-Hop Communication in Wireless Sensor Networks using Mote Runner. 2012. (M.Eng. in Computer Systems and Software Engineering) – University of York.

Okowa Aghudum. Runtime Monitoring of Inter-task Communication in Multi-core Architectures. 2010. (M.Sc. in Information Technology) – University of York.

Jianping Zhou. Efficient request/response support in multicore architectures. 2010. (M.Sc. in Information Technology) – University of York.

Ujwal Bhagwat. Indoor Localization using fingerprinting technique in minimal wireless sensor network setup. 2010. (M.Sc. in Computing) – University of York.

Xiaojie Zhang. Static mapping of tasks in large multicore systems using evolutionary algorithms. 2010. (M.Sc. in Computing) – University of York.

Akshay Dashrath. Comparative Analysis of Object Oriented and Procedural Programming Methodologies on the Android Platform. 2009. (M.Sc. in Information Technology) – University of York.

Tarun Chhabra. Service Availability Management in Power-constrained ad-hoc Networks. 2009. (M.Sc. in Computing) – University of York

Shasha Du. Design and Implementation of A Web-based Database System to Manage International Academic Collaboration Activities. 2009. (Master of Science in Information Technology) – University of York

Diego Alonso Ahogado Alvarez. Availability Management of Composable Services for Wireless Sensor Networks. 2008. (Master in Information and Communication Engineering) - Technische Universität Darmstadt.

Xi Liu. Design Space Exploration of the On-Chip Interconnect Structure of a Graphic Display Controller Using VisualSim. 2008. (Master in Information and Communication Engineering) - Technische Universität Darmstadt.

Pierre Dicandia. Design-Automatisierung von dynamisch rekonfigurierbarer Hardware. 2007. (Elektrotechnik und Informationstechnik) - Technische Universität Darmstadt. (Co-supervisor)

Cihan Senel. VHDL Hardware Design and Implementation of a Camera-Link Framegrabber based on a Dynamic Reconfigurable Image Processing Kernel. 2007. (Master in Information and Communication Engineering) - Technische Universität Darmstadt. (Co-supervisor)

Andreas Thuy. TinyOS Extensions Supporting Abstract Behavioral Modeling based on a Type System. 2007. (Elektrotechnik und Informationstechnik) - Technische Universität Darmstadt.

Abdelmajid El Mahjoub. VHDL Hardware Entwurf und Implementierung dynamisch rekonfigurierbarer Module auf einer Virtex-4 FPGA. 2006. (Elektrotechnik und Informationstechnik) - Technische Universität Darmstadt. (Co-supervisor)

Zhong Hua. Exploring Concurrency at Instruction Level on Reconfigurable Computing Platforms. 2006. (Master in Information and Communication Engineering) - Technische Universität Darmstadt.

Enkhbold Ochirsuren. Programmability support in a LEON2-based wireless sensor network node. 2006. (Master in Information and Communication Engineering) - Technische Universität Darmstadt.

Florian Markert. Unterstützung paralleler Befehlausführung in rekonfigurierbarer Hardware durch die Verwendung codegenerierender Actor-Bibliotheken. 2006. (Elektrotechnik und Informationstechnik) - Technische Universität Darmstadt.

Christopher Spies. Parallele Prozesse in rekonfigurierbaren Rechnersystemen: Entwurfsraumanalyse und Fallstudien. 2006. (Master in Informations- und Kommunikationstechnik) - Technische Universität Darmstadt.

Muhammed Najmul Huda. Real-time Operating System support for Leon-based reconfigurable hardware. 2005. (Master in Information and Communication Engineering) - Technische Universität Darmstadt.

Stefan Zink. VHDL Hardware-Entwurf und Implementierung modularer Algorithmen zur Farbrückgewinnung und Transformation eines CMOS Videosignals. 2005. (Elektrotechnik und Informationstechnik) - Technische Universität Darmstadt. (Co-supervisor)

Adeel Ashraf. VHDL-Entwurf und Implementierung eines parametrisierbaren Algorithmus zur Echtzeit-Binärisierung von Videodaten. 2005. (Elektrotechnik und Informationstechnik) - Technische Universität Darmstadt. (Co-supervisor)

Romualdo Begale Prudêncio. Analysis, Design and FPGA Implementation of a Reconfigurable Equalizer for WCDMA using Actor-oriented Modeling and Co-Simulation Tools. 2004. (Master in Information and Communication Engineering) - Technische Universität Darmstadt.

Elvio Carlos Dutra e Silva Jr. Analysis, Design and FPGA Implementation of Chaotic Systems as Alternative for Gaussian Noise Generation. 2004. (Master in Information and Communication Engineering) - Technische Universität Darmstadt.

Diego Fernando Jimenez Orostegui. Actor-oriented Encapsulation of Reconfigurable Prototyping Platforms. 2004. (Master in Information and Communication Engineering) - Technische Universität Darmstadt.

Friedhelm Mayer. VHDL Entwurf und Implementierung eines modularen Hardware-Bildverarbeitungsalgorithmus für Lichtschnittverfahren. 2004. (Elektrotechnik und Informationstechnik) - Technische Universitat Darmstadt. (Co-supervisor)

Florian Martin Lubitz. Typabstraktion für Jini-eingebettete rekonfigurierbare Hardware. 2002. (Elektrotechnik und Informationstechnik) - Technische Universität Darmstadt.

Bachelor Projects

Rayaan Rizwan Noor. Multi-Network Resource Management in IoT and Edge Devices using Genetic Algorithms. 2025. (Computer Science) – University of Leeds.

Toby Hutchinson. An Empirical Comparison of GOSSIP1(p, k) and Managed Flooding in Simulated LoRa Networks. 2025. (Computer Science) – University of Leeds.

William Talwar. Investigating the use of Parallel Processing for a Game of Evolutionary Life on Cloud Infrastructure. 2025. (Computer Science) – University of Leeds.

Leon Biju. Comparing the use of Simulated Annealing and Genetic Algorithms for Edge-network resource allocation. 2025. (Computer Science) – University of Leeds.

Hari Chander. Centralised 4D A Star Path Planning for Safe UAV Traffic Management. 2025. (Computer Science) – University of Leeds.

Cheah Zhen Yong. Investigating Combinatorial Scheduling Problem with Genetic Algorithms. 2025. (Computer Science) – University of Leeds.

Muhammad Shahrulnizam. Discrete-event Simulation of Routerless Network-on-Chip. 2025. (Computer Science) – University of Leeds.

Leo Bishop. Automatic Identification of Analysis Breaking Configurations for Wormhole Switching Networks-on-Chip with Priority-Preemptive Arbitration. 2024. (Computer Science) – University of Leeds.

Thomas Clarke - Investigating the Scalability of Mesh-Based Networks-on-a-Chip. 2024. (Computer Science) – University of Leeds.

Marcin Gil - Simulation and Analysis of Airspace Resource Management for Unmanned Aerial Vehicles Using Graph Search Algorithms. 2024. (Computer Science) – University of Leeds.

Thomas Joynson - Simulate Resource Management in an Arbitrary Network of Airspace Service Providers. 2024. (Computer Science) – University of Leeds.

Liam Mayall. A Simulation of Wormhole Switching in Networks. 2024. (Computer Science and Mathematics) – University of Leeds.

Rhys Milling. Cloud-based multi-stream video processing. 2023. (Computer Science) – University of York.

Kyriakos Antoniou. Simulation of Urban Airspace Resource Management. 2023. (Computer Science) – University of York.

Aymeric Goransson. Data Analysis and Machine Learning for HF Radio Communications. 2023. (Computer Science) – University of York.

Harry Whittaker. Simulation of Urban Airspace Resource Management. 2023. (Computer Science) – University of York.

Bethany Gilmore.Data Analysis and Machine Learning for HF Radio Communications. 2022. (Computer Science) – University of York.

Jack Longmuir. Data Analysis and Machine Learning for HF Radio Communications. 2022. (Computer Science) – University of York.

Quentin Rothman. Simulation of Urban Airspace Resource Management. 2022. (Computer Science) – University of York.

Joe Veale. Group formation tool for collaborative learning. 2022. (Computer Science) – University of York.

Shijie Lin. Group formation tool for collaborative learning. 2022. (Computer Science) – University of York.

Brian Chung. Group formation tool for collaborative learning. 2022. (Computer Science) – University of York.

Darren Mark Jones. Emulation for the Falcon microprocessor architecture. 2020. (Computer Science) – University of York.

Murray How-Spinks. Genetic Algorithms for Task Mapping over Real-Time Networks-on-Chip: Comparing Topologies. 2020. (Computer Science) – University of York.

Peter Castledine. Simulation of 6TiSCH Networks. 2020. (Computer Science) – University of York.

Suleman Zaki. Genetic Algorithms for Real-Time Network-on-Chip Optimisation. 2020. (Computer Science) – University of York.

Tim Bradgate. Simulation of the Impact of Automated Truck Platooning on Existing Road Infrastructure. 2019. (Computer Science) – University of York.

Matthew Dunn. Simulation of Mobile Robotic Agents for Supporting Load-Balancing Wireless Sensor Networks. 2019. (Computer Science) – University of York.

Maxime Franchot. A Small-Scale Wireless Localization Fingerprinting System using IRIS Motes. 2019. (Computer Science) – University of York.

Hugo Geeves. Simulation of the impact of automated truck platooning traffic over existing bridge infrastructure. 2019. (Computer Science) – University of York.

Thomas Braun. Simulation-based Evaluation of Network Latency and Optimisation in Wormhole Networks-on-Chip. 2018. (Computer Science) – University of York.

Jonathan Derrick. Real-Time Communication Guarantees over Mote Runner. 2018. (Computer Science) – University of York.

Alistair Blair. Maker Culture and Home Automation: An Experimental Study Focused on Multi-Room Audio, 2016. (Computer Science with Embedded Systems Engineering) - University of York.

Lyubomir Chernev. Scheduling Topology Reconfiguration for Networks on Chips. 2013. (Computer Science with Embedded Systems Engineering) - University of York.

Robert Cazaciuc. A web interface for wireless deployment of Mote Runner applications on sensor motes. 2012. (Computer Science) – University of York.

Alastair Clark. Applying pattern matching techniques to online penny auctions. 2012. (Computer Science) – University of York.

Derek Wicks. Broadcast-based Geographical Information System: a feasibility study concerning map data partitioning. 2010. (Computer Science) – University of York.

Andreas Thuy. UML Erweiterungen für Actor-oriented Modelierungswerkzeuge. 2004. (Elektrotechnik und Informationstechnik) - Technische Universität Darmstadt.

Florian Martin Lubitz. Entwurf und Implementierung einer verteilten Softwarearchitektur für eine transparente Integrierung von Java-Applikationen und rekonfigurierbare Hardware. 2002. (Elektrotechnik und Informationstechnik) - Technische Universität Darmstadt.

Luciano Copello Ost. Modelos 3D de Descrição de Layout de Sistemas Microeletrônicos. 2001. 0 f. Trabalho de Conclusão de Curso. (Graduação em Informática Campus II) - Pontifícia Universidade Católica do Rio Grande do Sul (PUCRS).

José Carlos Sant'Anna Palma. Sistema de Indexação Distribuída de Descrições VHDL de Circuitos Integrados usando Interface WWW. 1999. Trabalho de Conclusão de Curso. (Graduação em Informática Campus II) - Pontifícia Universidade Católica do Rio Grande do Sul (PUCRS).

Sílvia dos Santos Scholz. Sistema Integrado de Edição e Verificação de Sintaxe. 1999. Trabalho de Conclusão de Curso. (Graduação em Informática Campus II) - Pontifícia Universidade Católica do Rio Grande do Sul (PUCRS).

Internships

Ethan Proudlove. Experimental analysis of mesh-based wireless networks using LoRa protocol. 2024. (Computing) – University of Leeds.

Nickolay Smirnov. FPGA Implementation of NoC Router. 2019. (Computer Science) – University of York.

Jean-Louis Ferrer. Development of IEEE 802.15.4 protocol services over IBM Mote Runner. 2011. (Computer Science) – University of York.

Emma Brownbill. Mapping of Dataflow Applications onto Multicore Platforms. 2010. (Computer Science) – University of York.

Ritej Bachhawat. SystemC simulation of application-specific load over a Network-on-Chip. 2009. (Computer Science) – University of York.

Research Degree Examination Committees:

PhD Thesis Examinations

Yilian Ribot Gonzalez. Predictable Network on Chip for Real-Time Systems. 2024. PhD in Electrical and Computer Engineering. Engineering Department – University of Porto, Porto, Portugal. Examiners: L. S. Indrusiak, D. Dasari, F. J. Cazorla Almeida, P. A. G. L. F. Souto, G. Nelissen (co-advisor), L. Almeida (co-advisor), E. M. Tovar (co-advisor).

William Barnett. RoboArch: Architectural Modelling for Robotic Applications. 2022. PhD in Computer Science. Department of Computer Science - University of York, UK. Examiners: A. Butterfield, L. S. Indrusiak.

Neelam Arya. Energy-Efficient VLSI Architectures using Approximate Computing Techniques for Multimedia Applications. 2022. PhD. Indian Institute of Information Technology and Management Gwalior, India.

Roy Spliet. A SIMD architecture for hard real-time systems. 2020. PhD in Computer Science. Department of Computer Science and Technology – University of Cambridge, UK. Examiners: L. S. Indrusiak, D. Greaves.

Aakash Soni. Analyse de performance temps-réel d'un réseau industriel embarqué à qualité de service. 2020. PhD in Informatics and Telecommunications. Institut National Polytechnique de Toulouse - Université Fédérale Toulouse Midi-Pyrénées, Toulouse, France. Examiners: Y. Song, L. George, L. S. Indrusiak, C. Rochange, F. Ridouard, A. Soukane, J.-L. Scharbarg (advisor), J. Ermont (co-advisor).

Joao Loureiro. XDense: A Mesh Grid Sensor Network for Extreme Dense Sensing. 2020. PhD in Electrical and Computer Engineering. Engineering Department – University of Porto, Porto, Portugal. Examiners: L. S. Indrusiak, J.-L. Scharbarg, J. A. R. Silva Matos, J. M. P. Cardoso, P. J. L. M. Portugal, E. M. Tovar (advisor).

Haitong Wang. Reducing Latency Variation and Increasing Bandwidth for Real-time Multi-core Systems with Predictable Memory Interconnect. 2020. PhD in Computer Science. Department of Computer Science - University of York, UK. Examiners: K. Djemame, L. S. Indrusiak.

Savan Pankajkumar Vachhani. Investigation and Optimization of Novel Stack Structures. 2019. PhD in Computer Science. Department of Computer Science - University of York, UK. Examiners: H. Meng, L. S. Indrusiak.

Eberle Rambo. Fault-Tolerant Many-Cores for Mixed-Critical Real-Time Systems. 2019. Dr.-Ing. Fakultaet fuer Elektrotechnik, Informationstechnik, Physik – Technische Universitaet Carolo-Wilhelmina zu Braunschweig, Germany. Referees: R. Ernst (advisor), L. S. Indrusiak, H. Michalik.

Siavoosh Payandeh Azad. Cross-Layer Dependability Management in Network on Chip based System on Chip. 2018. PhD in Computer Systems Engineering. Department of Computer Systems, School of Information Technologies, Tallinn University of Technology, Tallinn, Estonia. Opponents: A Garcia-Ortiz, L. S. Indrusiak.

Wanli Yu. Energy Aware Task Allocation Algorithms for Wireless Sensor Networks. 2018. PhD in Electrical Engineering. Universitaet Bremen, Bremen, Germany. Referees: A Garcia-Ortiz (supervisor), K.-L. Krieger, L. S. Indrusiak, U. Frese.

Alemayehu Addisu Desta. Energy Supply and Demand Side Management in Industrial Microgrid Context. 2017. PhD in Informatics. ESIEE - University of Paris-Est, Paris, France. Examination committee members: M. Chetto, L. S. Indrusiak, P. Courbin, B. Gaujal, Y. Song, L. George (advisor), H. Badis (co-advisor).

Tom Fleming. Allocation and Optimisation of Mixed Criticality Cyclic Executives. 2017. PhD in Computer Science. Department of Computer Science - University of York, UK. Examiners: K. Hammond, L. S. Indrusiak.

Bharat Garg. Energy Efficient Accuracy Aware VLSI Architectures for Image Processing Applications using Approximate Computing. 2017. PhD. Indian Institute of Information Technology and Management Gwalior, India.

Lei Chen. Identifying the Usage Anomalies for ECG-based Healthcare Body Sensor Networks. 2017. PhD in Computer Science. Department of Computer Science - University of York, UK. Examiners: G. Kirby, L. S. Indrusiak.

Christos Evripidou. Scheduling for Mixed-Criticality Hypervisor Systems in the Automotive Domain. 2017. EngD in Large Scale Complex Information Technology Systems. Department of Computer Science – University of York, UK. Examiners: M. Short, L. S. Indrusiak.

Anastasiia Butko. Fast Cycle-approximate Simulation Techniques for Manycore Architecture Exploration. 2015. PhD in Microelectronics. Montpellier Laboratory of Informatics, Robotics and Microelectronics (LIRMM) - University of Montpellier, France. Examination committee members: L. S. Indrusiak, J.-F. Mehaut, L. C. Ost, C. Adeniyi-Jones, M. Robert, G. Sassatelli (advisor), A. Gamatie.

Jamie Garside. Real-Time Prefetching on Shared-Memory Multi-Core Systems. 2015. PhD in Computer Science. Department of Computer Science - University of York, UK. Examination committee members: W. Vanderbauwhede, S. Viglas, L. S. Indrusiak.

Gary John Plumbridge. Actor-Oriented Programming for Resource Constrained Multiprocessor Networks on Chip. 2015. PhD in Computer Science. Department of Computer Science - University of York, UK. Examiners: R. Jones, L. S. Indrusiak.

Marcelo Grandi Mandelli. Exploration of Runtime Distributed Mapping Techniques for Emerging Large Scale MPSoCs. 2015. PhD in Informatics. Jointly issued by Montpellier Laboratory of Informatics, Robotics and Microelectronics (LIRMM) - University of Montpellier, France, and Graduate Program in Computer Science - Pontifical Catholic University of Rio Grande do Sul (PUCRS), Brazil. Examination committee members: G. Gogniat, J. L. Guntzel, L. Torres, L.S. Indrusiak, C. Marcon, L. Ost, G. Sassatelli, F. G. Moraes (advisor).

Borislav Nikolic. Many-Core Platforms in the Real-Time Embedded Computing Domain. 2015. PhD in Electrical and Computer Engineering. Engineering Department – University of Porto, Porto, Portugal. Examiners: P. Eles, L. S. Indrusiak, L. M. R. S. Pinho, J. A. R. Silva Matos, P. A. G. L. F. Souto, M. J. R. Souza, S. Petters (advisor).

Oumair Naseer. Fault Tolerance Based Feedback Control Scheduling for Real Time Embedded Systems. 2014 (examination), 2015 (reexamination). PhD in Engineering. Graduate School – University of Warwick, Coventry, UK. Examiners: L.S. Indrusiak, L Ran.

Tiong Hoo Lim. Dependable Network Protocols in Wireless Sensor Networks. 2013. PhD in Computer Science. Department of Computer Science - University of York, UK. Examiners: U. Aickelin, L. S. Indrusiak.

Christopher Spies. Modellgestuetzte Analyse digitaler Hochfrequenz-Regelsysteme fuer ein Schwerionen-Synchrotron. 2013. Dr.-Ing. Fachbereich Elektrotechnik und Informationstechnik – Technische Universität Darmstadt, Germany. Referees: M. Glesner (advisor), H. Klingbeil, L.S. Indrusiak.

Mikhel Tagel. System-Level Design of Timing-Sensitive Network-on-Chip Based Dependable Systems. 2012. PhD. Department of Computer Engineering - Faculty of Information Technology – Tallinn University of Technology, Estonia. Opponents: Z. Peng, L.S. Indrusiak.

Leandro Heleno Moller. Communication Infrastructure Modeling of Many-Core Architectures. 2011. Dr.-Ing. Fachbereich Elektrotechnik und Informationstechnik – Technische Universität Darmstadt, Germany. Referees: M. Glesner (advisor), H. Eveking, L.S. Indrusiak (co-advisor), A. Klein, S. Santini.

Luciano Copello Ost. System-level Specification and Design Space Exploration of Networks-on-Chip. 2010. PhD in Computer Science. Graduate Program in Computer Science - Pontifical Catholic University of Rio Grande do Sul (PUCRS), Brazil. Committee members: J. Nurmi, L. Brisolara, A. Amory, L.S. Indrusiak (co-advisor), F. G. Moraes (advisor).

Ke Yu. Real-Time Operating System Modelling and Simulation Using SystemC. 2010. PhD in Computer Science. Department of Computer Science - University of York, UK. Examiners: W. Vanderbauwhede, L. S. Indrusiak.

Yana Esteves Krasteva. Reconfigurable Computing Based on Commercial FPGAs – Solutions for the Design and Implementation of Partially Reconfigurable Systems. 2009. PhD. Escuela Tecnica Superior de Ingenieros Industriales – Technical University of Madrid (UPM), Spain. Thesis reviewers: L. S. Indrusiak, D. Stroobandt, J. Silva Matos.

Lisane Brisolara de Brisolara. Strategies for Embedded Software Development based on High-level Models. 2007. PhD in Computer Science. Graduate Program in Computer Science (PPGC) - Universidade Federal do Rio Grande do Sul (UFRGS), Brazil. Committee members: L. S. Indrusiak, R. S. Oliveira, R. A. L. Reis (advisor), A. A. Susin.

PhD Milestone Assessments

Thesis Research Plan Assessor of Yilian Ribot González (2021), Engineering Department – University of Porto, Porto, Portugal. Supervisors: E. Tovar and G. Nelissen.

PhD Assessor of Bashar Saeed Al-Ani (2020-present), University of York, UK. Supervisor: I. Bate.

PhD Assessor of Ana Markovic (2020-2022), University of York, UK. Supervisor: D. Kolovos and N. Voros.

PhD Assessor of William Barnett. (2018-present), University of York, UK. Supervisors: A. Cavalcanti and A. Miyazawa.

PhD Assessor of Sina Madani (2017-2020), University of York, UK. Supervisor: D. Kolovos.

Thesis Proposal Assessor of Felipe Rosa (2017), Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil. Supervisors: R. Reis and L. Ost.

MRes Examinations

Geancarlo Abich. Extending FreeRTOS to Support Dynamic and Distributed Task Mapping in Multiprocessor Systems. 2017. MSc by Research in Computer Science. Graduate Program in Computer Science (PPGC) - Universidade Federal do Rio Grande do Sul (UFRGS), Brazil. Examiners: L. S. Indrusiak, E. A. Carara, A. A. Susin.

Jaison Valmor Bruch. Static Task Mapping of Real-Time Applications on Network-On-Chip based Systems. 2015. MSc. by Research in Applied Computer Science. Universidade do Vale do Itajai, Itajai, Brazil. Examiners: L. S. Indrusiak, M. E. Kreutz.

Tom Fleming. Extending Mixed Criticality Scheduling. 2013. MSc. by Research in Computer Science. Department of Computer Science - University of York, UK. Examiners: L. S. Indrusiak, G. Lipari.

Selected Talks:

Keynotes

Schedulability-driven Optimization of Real-time Systems, 10th Brazilian Symposium on Computing Systems Engineering, 24 November 2020. (70 attendees)

Cloud-based Evolutionary Optimisation of Cyber-Physical Systems, 6th International Conference on Computational Science and Technology (ICCST), Kota Kinabalu, Malaysia, 30 August 2019. (60 attendees)

Networks-on-Chip for Real-Time and Mixed-Criticality Applications, 12th International Symposium on Reconfigurable Communication-centric Systems-on-Chip (ReCoSoC), Madrid, Spain, 13 July 2017. (35 attendees)

Priority-based Wormhole Networks-on-Chip: challenges and opportunities, 15th International Workshop on Real-Time Networks (RTN), Dubrovnik, Croatia, 27 June 2017. (25 attendees)

Network-on-Chip Platforms for Real-Time Mixed-Criticality Applications, 23rd Int Conference on Real-Time Networks and Systems (RTNS), Lille, France, 4 November 2015. (70 attendees)

Performance Guarantees in Manycore Embedded Systems based on Network-on-Chip, 12th European Workshop on Performance Engineering (EPEW), Madrid, Spain, 1 September 2015. (50 attendees)

Bio-inspired Resource Management in Multiprocessor and Distributed Computing. 7th York Doctoral Symposium on Computer Science and Electronics (YDS 2014), York, UK, 30 October 2014. (60 attendees)

Exploring Application-level Concurrency in SoC Design. Int Symposium on System-on-Chip, Tampere, Finland. 16 Nov 2006. (70 attendees)

A Pragmatic Perspective on UML for System-on-Chip Design, 23rd IEEE Norchip Conference, Oulu, Finland, 21 Nov 2005. (70 attendees)

Invited Talks

Management of Performance Guarantees in On-Chip Interconnects, Penn State University, State College, PA, USA, 7 Apr 2025. (20 attendees)

Management of Performance Guarantees in On-Chip Interconnects, Huawei Alpes Heterogeneous Computing Workshop, Annecy, France, 18 Jun 2024. (80 attendees)

Not as Fast as Possible, but as Fast as Necessary: Optimising Performance in Real-time Distributed Computing, Inaugural Lecture, University of Leeds, 24 Apr 2024. (40 attendees)

Making the world smaller: internationalisation and microelectronics, Festkolloquium zum 80. Geburtstag von Professor em. Dr. Dr. h. c. mult. Manfred Glesner, Technische Universitaet Darmstadt, Darmstadt, Germany, 27 Oct 2023. (60 attendees)

Digital Evil Twins - identification of worst-case behaviours in real-time systems, Workshop on Data Science Infrastructures, Leeds Institute for Data Analytics, Leeds, England, 11 Jul 2023. (30 attendees)

Digital Evil Twins - identification of worst-case behaviours in real-time systems, Huawei Global Software Technology Summit 2023, Edinburgh, Scotland, 1 Jun 2023. (50 attendees, plus online streaming to 100s)

University internationalisation: different approaches and implications, 20 years of iCE – Anniversary celebration, Technische Universitaet Darmstadt, Darmstadt, Germany, 5 Jul 2022. (50 attendees)

Testes de Escalonabilidade em Sistemas de Tempo Real, Universidade Federal da Bahia, Salvador, Brazil, 30 Sep 2021. (40 attendees, online)

Evolutionary Optimisation of Cyber-Physical Systems, CASS Talks 2020, IEEE Circuits and Systems Society, Rio Grande do Sul Chapter, YouTube Live, 19 Jun 2020. (120 attendees, online)

Evolutionary Optimisation of Cyber-Physical Systems, Teesside University, Middlesbrough, England, 21 Feb 2020. (30 attendees)

Cloud-based Evolutionary Optimisation of Cyber-Physical Systems, Universiti Sains Islam Malaysia, Nilai, Malaysia, 23 Aug 2019. (15 attendees)

Cloud-based Evolutionary Optimisation of Cyber-Physical Systems, Universiti Teknologi Brunei, Brunei, 19 Aug 2019. (20 attendees)

Evolutionary Optimisation of Real-Time Systems and Networks, Workshop on Efficient Real-time Data Networks (ERDN), Nashville, USA, 11 Dec 2018. (20 attendees)

Priority-based Wormhole Networks, University of Essex, Colchester, England, 1 August 2018.

Evolutionary Optimisation of Real-Time Many-Cores, Adaptive Many-Core Architectures and Systems Workshop, York, England, 15 June 2018. (30 attendees)

Priority-based Wormhole Networks, Institute for Theoretical Electrical Engineering and Microelectronics - Universitaet Bremen, Bremen, Germany, 11 May 2018. (11 attendees)

Selfish and altruistic behaviour in resource-constrained cyber-physical systems using pheromone signalling, Self-Awareness in Cyber-Physical Systems (SelPhyS), Birmingham, England, 23 Apr 2018. (50 attendees)

Priority-based Wormhole Networks, IEEE CASS Santa Maria Workshop, Santa Maria, Brazil, 6 April 2018. (100 attendees)

Network-on-Chip Platforms for Real-Time Mixed-Criticality Applications, School of Electronics and Computer Science, University of Southampton, England, 22 February 2017. (30 attendees)

Dynamic Resource Allocation in Embedded and High-Performance Computing, The Open Group Event and Member Meeting - Real-time Embedded Systems, Austin, USA, 21 July 2016. (30 attendees)

Real-Time Mixed-Criticality Network-on-Chip Resource Allocation. 7th Int Workshop on Dependable Many-Core Computing (DMCC), Amsterdam, Netherlands, 23 July 2015. (30 attendees)

Bio-inspired Resource Management in Multiprocessor and Distributed Computing, 4th Brazil Korea Forum on Science, Technology and Innovation, Universidade do Vale do Rio dos Sinos, São Leopoldo, Brazil, 27 August 2014. (150 attendees)

Energy-efficient Embedded Hardware, Federal University of Santa Catarina – UFSC, Florianopolis, Brazil, 15 August 2014. (30 attendees)

Bio-inspired Resource Management in Multiprocessor and Distributed Computing, University of Vale do Itajaí – Univali, Itajai, Brazil, 14 August 2014. (100 attendees)

Bio-inspired Resource Management in Multiprocessor and Distributed Computing, Federal University of Rio Grande do Sul - UFRGS, Porto Alegre, Brazil, 4 August 2014. (30 attendees)

Bio-inspired Resource Management in Multiprocessor and Distributed Computing, Indian Institute of Information Technology and Management (IIITM), Gwalior, India, 7 February 2014. (50 attendees)

Real-Time Low-Power Task Mapping in Networks-On-Chip, CISTER Research Unit, School of Engineering, Polytechnic of Porto, Porto, Portugal, 4 September, 2013. (50 attendees)

Fast and accurate system-level model of a NoC-based MPSoC supporting real-time applications. Int Symposium on System-on-Chip, Tampere, Finland, November 1, 2011. (50 attendees)

Evaluation of Application-specific Multiprocessor Platforms based on Networks-on-Chip. University of Glasgow, Scotland, 2 Feb 2011. (15 attendees)

Design and Validation of Application-specific Multiprocessor Platforms based on Networks-on-Chip. CREDES Workshop, Tallinn, Estonia, 22 September 2010. (30 attendees)

System-on-Chip Design. TechnoInnova 2008, Queretaro, Mexico, 14 Nov 2008. (200 attendees)

SoC Specification using UML and Actor-Oriented Modeling, Int Baltic Electronics Conference, Tallinn, Estonia, 4 Oct 2006. (80 attendees)

Actor-Oriented Design (and some ideas on how to join forces with UML), Universität Kaiserslautern, Fraunhofer Institute for Experimental Software Engineering (IESE), Kaiserslautern, Germany, 28 Sep 2005. (30 attendees)

Actor-oriented Design of Integrated Systems, University of Valencia, Valencia, Spain, 19 May 2005. (30 attendees)

Marketing and Quality Assurance in the Application Process for the International Master Program in Information and Communication Engineering, Deutsche Akademische Austausch Dienst, Bonn, Germany, 9 Dec 2003. (30 attendees)

Future Trends in Microelectronic Systems Design, Pontificia Universidad Catolica del Peru, Lima, Peru, 12 Sep 2003. (45 attendees)

Panels and Tutorials

Panel: Role of LLM in certification and the assurance tool chain. 3rd International Workshop on Explainability of Real-time Systems and their Analysis at the IEEE Real-Time Systems Symposium (RTSS 2024), York, UK, 10 December 2024. (25 attendees)

Panel: Future Challenges in Reconfigurable Communication-centric Systems. 13th International Symposium on Reconfigurable Communication-centric Systems-on-Chip (ReCoSoC), Lille, France, 9 July 2018. (35 attendees)

Panel: Embedded, High-Performance, Cloud: is there a common design approach?, 11th International Symposium on Reconfigurable Communication-centric Systems-on-Chip (ReCoSoC), Tallinn, Estonia, 27 June 2016. (45 attendees)

Invited tutorial: UML as System Modeling Language. Int Symposium on System-on-Chip, Tampere, Finland, 31 October, 2011. (25 attendees)

Panel: Programmability of Reconfigurable and Communication-centric SoCs: are we doing any better? ReCoSoC 2010, Karlsruhe, Germany, 19 May 2010. (50 attendees)

Invited tutorial: MPSoC Modelling. EMICRO 2010 – 12th SBC Microelectronics School, Porto Alegre, Brazil, 10-15 May 2010. (70 attendees)

Invited tutorial: Application-Platform Mapping in MPSoCs, IEEE IDT 2009, Riyadh, Saudi Arabia, 17 Nov 2009. (80 attendees)

Selected Publications:

Theses

A Framework Supporting Collaboration on the Distributed Design of Integrated Systems
Doctoral Thesis. Programa de Pós-Graduação em Computação, Universidade Federal do Rio Grande do Sul, Porto Alegre, and Fachbereich Elektrotechnik und Informationstechnik, Technische Universität Darmstadt, 2003. 163 p.
Advisors: Prof. Dr. Ricardo A. L. Reis (UFRGS) and Prof. Dr. Dr. h. c. mult. Manfred Glesner (TU Darmstadt)
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