Curriculum Vitae

Jörg Kienzle

Last Update: March 15, 2023

Personal Data

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Webpage	http://www.cs.mcgill.ca/~joerg/
Date of Birth	31st of July, 1970 in Princeton, NJ, USA
Nationality	Canadian / Swiss
Languages	German (mother tongue), French and English

Education

Ph.D.	Software Engineering Laboratory, Computer Science Department, Swiss Federal Institute of Technology Lausanne (EPFL), Lausanne, Switzerland, June 2001. Thesis #2393: "Open Multithreaded Transactions: A Transaction Model for Concurrent Object-Oriented Programming"
Dipl.Ing.Inf.	Swiss Federal Institute of Technology Lausanne (EPFL), Lausanne, Switzerland, April 1997.[1] Thesis: "Network Applications in Ada 95"
High School	Realgymnasium, Basel, Switzerland, March 1989. Graduated with a "Matura Typus B" (Latin)

Academic, Work and other Experience

- **June 2008 - present**

  Associate Professor, School of Computer Science, McGill University, Montreal, Canada
- **August 2002 - May 2008**

  Assistant Professor, School of Computer Science, McGill University, Montreal, Canada

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[1]Similar to a M.Sc. with major in Computer Science

- **June 2001 - July 2002**

  Senior Research Assistant and Course Lecturer, Software Engineering Lab, Swiss Federal Institute of Technology, Lausanne, Switzerland

- **April 1997 - April 2001**

  Research and Teaching Assistant, Software Engineering Lab, Swiss Federal Institute of Technology, Lausanne, Switzerland

- **August 1994 - May 1995**

  Exchange year at Carnegie Mellon University, Pittsburgh, PA, USA

- **January 1990 - July 1995**

  Development of two computer games, "Gate" and "Spacefox" (first using 65c816 assembler on the Apple II GS, then 68k assembly, C and Pascal for the Macintosh). Both games were published by the company Toolbox (France) and then later by Seven Hills Software (USA).

- **March 1989 - March 1992**

  Professional Ice Dancing Career. Highest international rank: 18th / 27 at the World Figure Skating Championships in San Francisco, USA, March 1992.

- **March 1988 - March 199**1

  Part time job as a database programmer at Hoffman-La Roche AG, Basel, Switzerland.

Grants

2018 - 2023   **NSERC Discovery Grant** "Concern-Oriented Reuse"
Amount: $34,000 for 5 years (total of $170,000)

2017   **NSERC Research Tools and Instruments Grant** "Cloud / Distributed Computing Infrastructure"
Amount: $60,000 (shared with Prof. Kemme, Maheswaran and Ruth)

201gra3 - 2018 **NSERC Discovery Grant** "Concern-Oriented Software Development"
Amount: $35,000 for 5 years (total of $175,000)

2013 - 2015   **NSERC Discovery Accelerator Supplement**
Amount: $40,000 for 3 years (total of $120,000)

2010 - 2014   **NSERC Strategic Network Grant** (Natural Sciences and Engineering Council of Canada) "SURFNet: Digital Surface Software Application Network"
Amount: $1,000,000 for 5 years (total of $5,000,000) (together with 12 other professors)

2012 - 2013   **NSERC Discovery Grant** "Aspect-Oriented Software Development"
Amount: $22,000 for 1 year

2007 - 2010   **NSERC Strategic Grant** "Consistency and Instanced Massively Multiplayer Games"
Amount: $99,060 for 3 years (total of $297,180) (together with Prof. Clark Verbrugge and Prof. Bettina Kemme)

2007 - 2012   **NSERC Discovery Grant** "Engineering Fault Tolerance"
Amount: $22,000 for 5 years (total of $110,000)

2007   **DRDC** (Canadian Defense Research and Development) **Contract**
Amount: $22,000

2004 - 2006   **McGill** Research Grants Office **Seminar** Grant "School of Computer Science Colloquium"
Amount: $6,500

2003 - 2007   **NSERC Discovery Grant** "Engineering Fault Tolerance"
Amount: $21,000 for 4 years (total of $84,000)

2003 - 2006   **FQRNT** (Fonds québécois de la recherche sur la nature et les technologies) **Nouveau Chercheur Grant** "Programmation Orienté-Aspect et Génie Logiciel"
Amount: $15,000 for 3 years (total of $45,000)

2004 - 2006   **CFI New Opportunities** Equipment Maintenance Grant
Amount: $25,718 (in conjunction with Prof. Clark Verbrugge)

2003   **FQRNT Nouveau Chercheur** Equipment Grant
Amount: $15,000

2003   **CFI** (Canadian Foundation for Innovation) **New Opportunities** Grant "Fault-tolerant Massive Multiplayer Gaming Infrastructure"
Amount: $214,319 (in conjunction with Prof. Clark Verbrugge)

2002   **McGill** Research Grants Office **Startup** Grant
Amount: $20,000

2002   **McGill** School of Computer Science **Startup** Grant
Amount: $50,000

Awards

- **Best Paper, 11th International Conference on Model Transformation -- ICMT 2018 for paper "Model transformation reuse across metamodels"**
- **Distinguished Paper, 11th ACM SIGPLAN International Conference on Software Language Engineering – SLE 2018 for paper "Facet-oriented modelling: Open Objects for Model-driven Engineering"**
- **Best Demonstration**, 10th ACM International Conference on Distributed and Event-based Systems, 2016
- **Best Paper**, 15th International Workshop on Aspect-Oriented Modeling, Oslo, Norway, October 2010
- **Best Paper**, 11th International Workshop on Aspect-Oriented Modeling, Nashville, TN, USA, September 2007
- **Prix ABB**, September 2002
  Award "ABB en technologie d'information et d'automatisation", given once every second year for an innovative Ph.D. thesis in the field of Computer Science at the Swiss Federal Institutes of Technology, Board of the Swiss Federal Institutes of Technology, Switzerland
- **Best Paper**, International Conference on Reliable Software Technologies – Ada-Europe'2000, Potsdam, Berlin, Germany, June 2000
- **Prix ELCA Informatique,** April 1997
  Computer Science student with the best results in the diploma examinations and diploma project (9.9/10), Swiss Federal Institute of Technology Lausanne, Lausanne, Switzerland

Patents

- U.S. Patent: "Methods and Systems for Graph-based Publication-Subscription", Application No. 15/369,277, granted 8th of June, 2017.
- Reports of Invention (Provincial Patent): ROI 16029: "Pub/Sub Middleware/Concepts Based on Graphs", filed on July 8th, 2015.

Software Releases

TouchCORE, a multi-touch, multi-user tool for concern-oriented software design modeling. Macintosh, Windows and Unix versions can be downloaded from: http://touchcore.cs.mcgill.ca/

Most Significant Contributions to Research

1. **Concern-Oriented Reuse**
   Concern-oriented Reuse (CORE) is an new software development paradigm introduced by my research team in 2013 [90, 91, 115] that combines the ideas of Model-Driven Engineering (MDE), advanced modularization techniques (aspects), and software product lines, to address the challenge of how to enable broad-scale, model-based reuse. A concern is a unit of reuse that groups together software artifacts (models and code,) describing properties and behaviour related to any domain of interest to a software engineer at different levels of abstraction. A concern provides three interfaces [116]: The *variation interface (VI)* describes required design decisions and their impact on high-level system qualities, both explicitly expressed using feature and impact models in the concern specification. The *customization interface* (CI) allows the chosen variation to be adapted to a specific reuse context, while the *usage interface* (UI) defines how the functionality encapsulated by a concern may be used. CORE streamlines the reuse process by allowing a developer to a) choose a desired variant (from the VI), adapt the chosen models to the reuse context (with the CI), and then CORE offers the developer the possibility delay design decisions.
   To demonstrate the effectiveness of CORE, we developed a tool called TouchCORE [105, 112] (touchcore.cs.mcgill.ca), which is shipped with a vast library of reusable software development concerns encapsulating reusable models (feature models, goal models, class diagrams, sequence diagrams and state diagrams) and implementations. The tool guides the concern user when selecting variations (making valid selections) and evaluating impacts (allowing the user to do trade-off analysis between different selections). In addition, the tool uses model-checking to ensure proper customization and usage of reusable concerns. Finally, it hides the complexity of models and code compositions and transformations that are necessary to generate an executable application from the concern user. TouchCORE was presented at several high-caliber conferences and workshops (MODELS 2014, Modularity:AOSD 2015, and MODELS 2015). We used TouchCORE to create design models for many software development concerns, and we modelled a software product line of crisis management systems [12]. Currently is used by academics in Canada, the US, France, Norway, Luxembourg and Germany.
   Most recently, we have worked on different visualization modes of concern feature models to maximally support software developers [104] as well as concern-oriented reuse of existing APIs and frameworks [111].

2. **Aspect-Orientation**
   Aspect-orientation (AO) is a fairly new modularization paradigm introduced in the late 90s, and there is a need for the research community to demonstrate the potential of AO on case studies of significant size. To evaluate aspect-oriented programming language properties, I proposed the AspectOPTIMA case study [49], a

transaction framework consisting of 37 aspects, and showed how to implement it in the programming language *AspectJ* [8]. In 2009, I proposed the *Crisis Management System* case study to the aspect-oriented modelling community [9]. I edited a special issue of the journal *Transactions on Aspect-Oriented Development* about this case study with world-wide contributions from AOM researchers [9]. Since then, 4 workshops have already been held that compared different AOM approaches by means of this case study.

The quality of my research in the field of AO has been highly recognized by the AO community. A proof of that is that I was asked to be the PC chair of the main conference in this field, the ACM/IEEE Conference on Modularity/Aspect-Oriented Software Development in 2013.

3. **Aspect-Oriented Modelling / Model-Driven Engineering**

   In 2007-2012 I have devised a novel approach to aspect-oriented modelling (AOM) called *Reusable Aspect Models* (RAM) that makes scalable multi-view modelling possible [58, 63, 65, 10, 70, 25, 76]. A RAM aspect model describes the structure and the behavior of a design concern using class diagrams, sequence diagrams and state diagrams. Each model specifies a usage and a customization interface, which our TouchRAM tool [80] uses to ensure correct model reuse. With TouchRAM, a developer can generate woven models of considerable size based on multiple, small, individually reusable aspect models. RAM today is one of the most comprehensive aspect-oriented modelling approaches world-wide. Demos of TouchRAM were presented at several high-caliber conferences and workshops (RE 2012, MODELS 2012, SLE 2012, SurfNet 2011/2012, Modularity:AOSD 2013, MODELS 2013, and Modularity:AOSD 2014).

   RAM was evaluated on several case studies of significant size. For instance, a RAM design for AspectOPTIMA has been published in [63], and the design of the crisis management system in [10].

   I have co-organized 14 1-day workshops on Aspect-Oriented Modelling since 2002, co-located with the AOSD and MODELS conferences, as well as organized 7 1-week workshops on Aspect-Oriented Modelling at the Bellairs McGill Research Institute. I have been the workshop chair for MODELS 2011, the tutorial chair for MODELS 2013, and the PC chair of MODELS 2016.

4. **Integrating Fault Tolerance into the Software Development Life Cycle**

   Over the last five years I have been working on integrating the concern of fault tolerance into the software development life cycle. Having fault tolerance in mind from the beginning allows software developers to *engineer* support for fault tolerance. At the requirements level, discovering and documenting all possible abnormal situations and irregular user behavior that can interrupt normal system interaction is of tremendous importance in the context of dependable system development. To this aim we show in [46, 23] how use cases can be extended to address exceptional situations. This makes it possible to discover and then specify the required level of fault tolerance precisely at an early stage. We then show in [51] how the exceptional use cases can be probabilistically analyzed to get feedback on the achievable safety and reliability of the system, if it were to be built with a given set of (potentially failing) components. Based on the detailed specification of normal and exceptional behavior and the desired reliability and safety of the system, an appropriate software architecture and efficient fault tolerance techniques can be employed during design. [24] presents DREP, our dependability-focussed requirements engineering process in detail. [61] shows how we integrated degraded service outcomes and exceptional modes of operations into our model-driven requirements engineering process, and [66] presents how we employ model transformation techniques to map use cases to activity diagrams. Finally, in [47] we show how a model-driven approach and model simulation can efficiently analyze the fault tolerance properties of complex systems to help the developer in determining the performance of different fault tolerance techniques.

5. **Elaboration of a New Transaction Model named *Open Multithreaded Transactions***

   In [1, 39] I propose a new transaction model named *Open Multithreaded Transactions* (OMTT), which provides

features for controlling and structuring not only accesses to objects, as usual in transaction systems, but also threads / processes taking part in transactions. The model allows several threads to enter the same transaction in order to perform a joint activity. The OMTT model incorporates disciplined exception handling adapted to nested transactions. It allows individual threads to perform forward error recovery by handling an abnormal situation locally, and promotes a defensive approach for developing transactional objects, so that errors are detected early and dealt with inside the transaction. If local handling fails, the transaction support applies backward error recovery and reverses the system to its initial state. Due to the isolation property and disciplined exception handling, OMTTs do not allow errors to propagate to the outside, and hence constitute ideal units of fault tolerance for structuring the execution of loosely coupled cooperative and competitive concurrent systems. The model has been validated through the design and implementation of an online auction system [42]. [50] investigates a performance enhancement technique for OMTTs that allows participating threads to exit an ongoing transaction under the assumption that the transaction will commit.

6. **Design of Optima, a Framework Providing Transaction Run-Time Support**

   Optima [1] is a highly customizable framework providing the necessary run-time support for transactions, and OMTTs in particular. The framework supports among others optimistic and pessimistic concurrency control, different recovery strategies (i.e. Undo/Redo, NoUndo/Redo, Undo/NoRedo), different caching techniques, different update strategies, different logging techniques (i.e. physical logging and logical logging), and different storage devices. Among pessimistic concurrency control, the framework provides built-in support for lock-based concurrency control, with strict read / write or commutativity-based locking.

   Different interfaces for an application programmer have been developed, including a procedural, an object-based, an object-oriented interface and an aspect-oriented interface [41] (the feasibility and the elegance of the interfaces depend of course on the available features of the programming language). The framework has been implemented for Ada 95 [37, 3], Java and using the CORBA OTS [44]. AspectOptima [49, 8] is an aspect-oriented implementation of Optima done in AspectJ.

7. **Massively Multiplayer Games / Pub/Sub Middleware**

   In 2005, I started the development of Mammoth [158], a massively multiplayer online game (MMOG) research framework. MMOGs, where thousands of players around the globe connect via their home computers to a common game platform, present many new research challenges in the areas of scalability, consistency, and fault tolerance. In [55] we present measurements obtained in Mammoth using human and computer-generated player actions that show that interest management techniques based on an obstacle-aware partitioning of the virtual world significantly reduce the number of required update messages. We also show that the same partitioning can be used to perform dynamic load balancing [77], and present a unified framework for load-balancing, fault tolerance and cheat detection in [11]. In [52] and [56] we demonstrate how the ideas of model-driven development can be used in the context of computer game AI, in particular to increase the modularity and reusability of behaviour specifications [72, 84]. In the last 5 years, we started investigating how to use Publish/Subscribe middleware in the context of MMOGs [102, 108], automatically evolving subscriptions for MMOGs [123], and how to provide MMOG services such as real-time message dissemination, interest management, and game object storage in the Cloud [96, 107, 124, 126]. Finally, we proposed a scalable, real-time monitoring architecture and implementation on top of P2P technology for monitoring virtual worlds [106]. Most recently, we devised a novel technology called GraPS [109], a pub/sub middleware that provides a publication model based on graphs. Points of interest in the information domain are mapped to nodes, and relationships between points of interest are mapped to edges. Consumers can effectively express their interest in publications by means of graph subscriptions that exploit the properties of nodes and the semantics of the edge relationships. These graph subscriptions are then automatically updated whenever the information domain changes. The algorithms

and subscription language of GraPS have been patented (U.S. Patent: "Methods and Systems for Graph-based Publication-Subscription", Application No. 15/369,277, granted June 8th 2017).

Publications

Books

[1] J. Kienzle, *Open Multithreaded Transactions — A Transaction Model for Concurrent Object-Oriented Programming*. Kluwer Academic Publishers, 2003.

Journals

[2] A. J. Wellings, B. Johnson, B. Sanden, J. Kienzle, T. Wolf, and S. Michell, "Integrating Object-Oriented Programming and Protected Objects in Ada 95," *ACM Transactions on Programming Languages and Systems*, vol. 22, pp. 506 – 539, May 2000.

[3] J. Kienzle and A. Romanovsky, "A Framework Based on Design Patterns for Providing Persistence in Object-Oriented Programming Languages," *IEE Proceedings - Software Engineering*, vol. 149, pp. 77 – 85, June 2002.

[4] J. Kienzle, "On Atomicity and Software Development," *Journal of Universal Computer Science*, vol. 11, pp. 687 – 702, May 2005.

[5] A. Denault and J. Kienzle, "Avoid common pitfalls when programming 2D graphics in Java: Lessons learnt from implementing the Minueto toolkit," *ACM Crossroads*, vol. 13, March 2007.

[6] M. Zia, S. Mustafiz, H. Vangheluwe, and J. Kienzle, "A Modelling and Simulation Based Process for Dependable Systems Design," *Software and Systems Modeling*, pp. 437 – 451, April 2007.

[7] S. Mustafiz, X. Sun, J. Kienzle, and H. Vangheluwe, "Model-Driven Requirements Assessment of System Dependability," *Software and Systems Modeling*, pp. 487 – 502, October 2008.

[8] J. Kienzle, E. Duala-Ekoko, and S. Gélineau, "AspectOPTIMA: A Case Study on Aspect Dependencies and Interactions," *Transactions on Aspect-Oriented Software Development*, vol. 5, pp. 187 – 234, March 2009.

[9] J. Kienzle, N. Guelfi, and S. Mustafiz, "Crisis Management Systems: A Case Study for Aspect-Oriented Modeling," *Transactions on Aspect-Oriented Software Development*, vol. 7, pp. 1 – 22, 2010.

[10] J. Kienzle, W. A. Abed, F. Fleurey, J.-M. Jézéquel, and J. Klein, "Aspect-Oriented Design with Reusable Aspect Models," *Transactions on Aspect-Oriented Software Development*, vol. 7, pp. 272 – 320, 2010.

[11] A. Denault and J. Kienzle, "Journey: A massively multiplayer online game middleware," *IEEE Software*, vol. 28, pp. 38–44, September 2011.

[12] O. Alam, J. Kienzle, and G. Mussbacher, "Modelling a family of systems for crisis management with concern-oriented reuse," *Software: Practice and Experience*, November 2016.

[13] B. Combemale, J. Kienzle, G. Mussbacher, O. Barais, E. Bousse, W. Cazzola, P. Collet, T. Degueule, R. Heinrich, J.-M. Jézéquel, M. Leduc, T. Mayerhofer, S. Mosser, M. Schöttle, M. Strittmatter, and A. Wortmann, "Concern-oriented language development (COLD): Fostering reuse in language engineering," *Computer Languages, Systems & Structures*, vol. 54, pp. 139 – 155, 2018.

[14] J. Kienzle, G. Mussbacher, B. Combemale, and J. Deantoni, "A unifying framework for homogeneous model composition," *Software & Systems Modeling*, vol. 18, pp. 3005–3023, Jan 2019.

[15] J. Kienzle, B. Combemale, G. Mussbacher, L. Bastin, N. Bencomo, J.-M. Bruel, C. Becker, S. Betz, R. Chitchyan, B. H. C. Cheng, S. Klingert, R. F. Paige, B. Penzenstadler, N. Seyff, E. Syriani, and C. C. Venters, "Towards model-driven sustainability evaluation," *Communications of the ACM*, vol. 63, pp. 80 – 91, March 2020.

[16] J.-M. Bruel, B. Combemale, E. Guerra, J.-M. Jézéquel, J. Kienzle, J. de Lara, G. Mussbacher, E. Syriani, and H. Vangheluwe, "Comparing and classifying model transformation reuse approaches across metamodels," *Software and Systems Modeling*, vol. 19, no. 2, pp. 441–465, 2020.

[17] G. Mussbacher, B. Combemale, J. Kienzle, S. Abrahão, H. Ali, N. Bencomo, M. Búr, L. Burgueño, G. Engels, P. Jeanjean, J.-M. Jézéquel, T. Kühn, S. Mosser, H. Sahraoui, E. Syriani, D. Varró, and M. Weyssow, "Opportunities in intelligent modeling assistance," *Software and Systems Modeling*, vol. 19, no. 5, pp. 1045–1053, 2020.

[18] J. D. Lara, E. Guerra, and J. Kienzle, "Facet-oriented modelling," *ACM Transactions on Software Engineering and Methodology*, vol. 30, Feb. 2021.

[19] B. Combemale, J. Kienzle, G. Mussbacher, H. Ali, D. Amyot, M. Bagherzadeh, E. Batot, N. Bencomo, B. Benni, J.-M. Bruel, J. Cabot, B. H. Cheng, P. Collet, G. Engels, R. Heinrich, J.-M. Jezequel, A. Koziolek, S. Mosser, R. Reussner, H. Sahraoui, R. Saini, J. Sallou, S. Stinckwich, E. Syriani, and M. Wimmer, "A hitchhiker's guide to model-driven engineering for data-centric systems," *IEEE Software*, vol. 38, no. 4, pp. 71–84, 2021.

[20] H. Ali, G. Mussbacher, and J. Kienzle, "Perspectives to promote modularity, reusability, and consistency in multi-language systems," *Innovations in Systems and Software Engineering*, vol. 18, no. 1, pp. 5–37, 2022.

[21] R. Saini, G. Mussbacher, J. L. C. Guo, and J. Kienzle, "Automated, interactive, and traceable domain modelling empowered by artificial intelligence," *Software and Systems Modeling*, vol. 21, no. 3, pp. 1015–1045, 2022.

Refereed Bookchapters

[22] A. Romanovksy and J. Kienzle, "Action-Oriented Exception Handling in Cooperative and Competitive Object-Oriented systems," in *Advances in Exception Handling Techniques* (A. Romanovsky, C. Dony, J. L. Knudsen, and A. Tripathi, eds.), no. 2022 in Lecture Notes in Computer Science, pp. 147 – 164, Springer Verlag, 2001.

[23] A. Shui, S. Mustafiz, and J. Kienzle, "Exception-Aware Requirements Elicitation with Use Cases," in *Advanced Topics in Exception Handling Techniques* (A. Romanovsky, C. Dony, J. L. Knudsen, and A. Tripathi, eds.), no. 4119 in Lecture Notes in Computer Science, pp. 221 – 242, Springer Verlag, 2006.

[24] S. Mustafiz and J. Kienzle, "A Requirements Engineering Process for Dependable Reactive Systems," in *Methods, Models and Tools for Fault Tolerance* (A. Romanovsky, C. Jones, J. L. Knudsen, and A. Tripathi, eds.), no. 5454 in Lecture Notes in Computer Science, pp. 220 – 250, Springer Verlag, 2009.

[25] M. E. Kramer and J. Kienzle, "Mapping Aspect-Oriented Models to Aspect-Oriented Code," in *Models in Software Engineering*, no. 6627 in Lecture Notes in Computer Science, pp. 125 – 139, Springer Verlag, 2011.

[26] G. Mussbacher, W. Al Abed, O. Alam, S. Ali, A. Beugnard, V. Bonnet, R. Broek, A. Capozucca, B. Cheng, U. Fatima, R. France, G. Georg, N. Guelfi, P. Istoan, J.-M. Jézéquel, J. Kienzle, J. Klein, J.-B. Lézoray, S. Malakuti, A. Moreira, A. Phung-Khac, and L. Troup, "Comparing six modeling approaches," in *Models in*

Software Engineering (J. Kienzle, ed.), vol. 7167 of *Lecture Notes in Computer Science*, pp. 217–243, Springer Berlin / Heidelberg, 2012.

[27] W. Al Abed, M. Schöttle, A. Ayed, and J. Kienzle, "Concern-oriented behaviour modelling with sequence diagrams and protocol models," in *Behavior Modeling - Foundations and Applications*, vol. 6368 of *LNCS*, pp. 250 – 279, Springer, 2015.

[28] C. Dragert, J. Kienzle, and C. Verbrugge, "Modular reuse of AI behaviours for digital games," in *Computer Games and Software Engineering*, pp. 215 – 240, CRC Press, 2015.

Refereed Conferences and Workshops

[29] J. Kienzle, T. Wolf, and A. Strohmeier, "Secure Communication in Distributed Ada," in *1st International Conference on Reliable Software Technologies - Ada-Europe 96, Montreux, Switzerland, June 10-14, 1996*, no. 1088 in Lecture Notes in Computer Science, pp. 198 – 210, Springer Verlag, 1996.

[30] J. Kienzle, "Network Applications in Ada 95," in *TRI-Ada '97 Conference*, (St. Louis, MO), pp. 3 – 9, ACM Press, November 1997.

[31] J. Kienzle and A. Strohmeier, "Shared Recoverable Objects," in *4th International Conference on Reliable Software Technologies - Ada-Europe 99, Santander, Spain, June 7-11, 1999* (M. G. Harbour and J. A. de la Puente, eds.), vol. 1622 of *Lecture Notes in Computer Science*, pp. 397 – 411, 1999.

[32] J. Kienzle, "Combining Tasking and Transactions," in *Proceedings of the 9th International Real-Time Ada Workshop, Wakulla Springs Lodge, Tallahassee FL, USA, March 1999*, no. XIX(2) in Ada Letters, pp. 49 – 53, ACM Press, June 1999.

[33] J. Kienzle and A. Romanovsky, "On Persistent and Reliable Streaming in Ada," in *5th International Conference on Reliable Software Technologies - Ada-Europe 2000, Potsdam, Germany, June 26-30, 2000* (H. B. Keller and E. Plöderer, eds.), no. 1845 in Lecture Notes in Computer Science, pp. 82 – 95, 2000.

[34] J. Kienzle and A. Romanovsky, "Combining Tasking and Transactions, Part II: Open Multithreaded Transactions," in *Proceedings of the 10th International Real-Time Ada Workshop, Castillo de Magalia, Las Navas del Marques, Avila, Spain, September 2000*, no. XXI(1) in Ada Letters, pp. 67 – 74, ACM Press, March 2001.

[35] J. Kienzle, "Exception Handling in Open Multithreaded Transactions," in *ECOOP Workshop on Exception Handling in Object-Oriented Systems, Cannes, France*, June 2000.

[36] A. J. Wellings, B. Johnson, B. Sanden, J. Kienzle, T. Wolf, and S. Michell, "Object-Oriented Programming and Protected Objects in Ada 95," in *5th International Conference on Reliable Software Technologies - Ada-Europe 2000, Potsdam, Germany, June 26-30, 2000* (H. B. Keller and E. Plöderer, eds.), no. 1845 in Lecture Notes in Computer Science, pp. 16 – 28, 2000.

[37] J. Kienzle, R. Jiménez-Peris, A. Romanovsky, and M. Patiño-Martinez, "Transaction Support for Ada," in *6th International Conference on Reliable Software Technologies - Ada-Europe 2001, Leuven, Belgium, May 14-18, 2001*, no. 2043 in Lecture Notes in Computer Science, pp. 290 – 304, Springer Verlag, 2001.

[38] X. Caron, J. Kienzle, and A. Strohmeier, "Object-Oriented Stable Storage based on Mirroring," in *6th International Conference on Reliable Software Technologies - Ada-Europe 2001, Leuven, Belgium, May 14-18, 2001*, no. 2043 in Lecture Notes in Computer Science, pp. 278 – 289, Springer Verlag, 2001.

[39] J. Kienzle, A. Romanovsky, and A. Strohmeier, "Open Multithreaded Transactions: Keeping Threads and Exceptions under Control," in *Proceedings of the 6th International Workshop on Object-Oriented Real-Time Dependable Systems, Universita di Roma La Sapienza, Roma, Italy, January 8th - 10th, 2001*, pp. 209 – 217, IEEE Computer Society Press, 2001.

[40] J. Kienzle and A. Romanovsky, "Implementing Exceptions in Open Multithreaded Transactions," in *Workshop on Exception Handling for a 21st Century Programming Language, Leuven, Belgium, May 14th, 2001*, no. XXI(3) in Ada Letters, pp. 57 – 63, ACM Press, September 2001.

[41] J. Kienzle and R. Guerraoui, "AOP - Does It Make Sense? The Case of Concurrency and Failures," in *16th European Conference on Object–Oriented Programming – ECOOP 2002* (B. Magnusson, ed.), no. 2374 in Lecture Notes in Computer Science, (Malaga, Spain), pp. 37 – 61, Springer Verlag, 2002.

[42] J. Kienzle, A. Romanovsky, and A. Strohmeier, "Auction System Design Using Open Multithreaded Transactions," in *Proceedings of the 7th International Workshop on Object-Oriented Real-Time Dependable Systems, San Diego, California, USA, January 7th - 9th, 2002*, (Los Alamitos, CA), pp. 95 – 104, IEEE Computer Society Press, 2002.

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[137] W. Bian, O. Alam, and J. Kienzle, "Is automated grading of models effective? assessing automated grading of class diagrams," in *Proceedings of the 23rd ACM/IEEE International Conference on Model Driven Engineering Languages and Systems – MODELS 2020*, MODELS '20, (New York, NY, USA), pp. 365–376, Association for Computing Machinery, 2020.

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[139] R. Saini, G. Mussbacher, J. L. C. Guo, and J. Kienzle, "Domobot: A bot for automated and interactive domain modelling," in *2nd Workshop on Artificial Intelligence and Model-Driven Engineering co-located with the 23rd ACM/IEEE International Conference on Model Driven Engineering Languages and Systems*, MODELS '20, (New York, NY, USA), Association for Computing Machinery, 2020.

[140] D. Devine, O. Alam, J. Kienzle, and C. C. Siow, "A composition algorithm for reusable workflow models," in *2nd Workshop on Modelling Language Engineering and Execution co-located with the 23rd ACM/IEEE International Conference on Model Driven Engineering Languages and Systems*, MODELS '20, (New York, NY, USA), Association for Computing Machinery, 2020.

[141] H. Ali, G. Mussbacher, and J. Kienzle, "Action-driven consistency for modular multi-language systems with perspectives," in *Proceedings of the 12th System Analysis and Modelling Conference*, SAM '20, (New York, NY, USA), pp. 95–104, Association for Computing Machinery, 2020.

[142] R. Saini, G. Mussbacher, J. L. C. Guo, and J. Kienzle, "Automated Traceability for Domain Modelling Decisions Empowered by Artificial Intelligence," in *2021 IEEE 29th International Requirements Engineering Conference (RE)*, pp. 173–184, IEEE, 2021.

[143] M. Schiedermeier, B. Li, R. Languay, G. Freitag, Q. Wu, J. Kienzle, H. Ali, I. Gauthier, and G. Mussbacher, "Multi-Language Support in TouchCORE," in *2021 ACM/IEEE International Conference on Model Driven Engineering Languages and Systems Companion*, (Los Alamitos, CA, USA), pp. 625–629, IEEE Computer Society, oct 2021.

[144] R. Saini, G. Mussbacher, J. L. C. Guo, and J. Kienzle, "DoMoBOT: An AI-Empowered Bot for Automated and Interactive Domain Modelling," in *2021 ACM/IEEE International Conference on Model Driven Engineering Languages and Systems Companion*, (Los Alamitos, CA, USA), pp. 595–599, IEEE Computer Society, oct 2021.

[145] M. Schiedermeier, J. Kienzle, and B. Kemme, "FIDDLR: Streamlining Reuse with Concern-Specific Modelling Languages," in *Proceedings of the 14th ACM SIGPLAN International Conference on Software Language Engineering*, (New York, NY, USA), pp. 164 – 176, Association for Computing Machinery, 2021.

[146] J.-M. Jézéquel, J. Kienzle, and M. Acher, "From feature models to feature toggles in practice," in *Proceedings of the 26th ACM International Systems and Software Product Line Conference - Volume A*, SPLC 2022, (New York, NY, USA), p. 234â244, Association for Computing Machinery, 2022.

[147] J. Kienzle, B. Combemale, G. Mussbacher, O. Alam, F. Bordeleau, L. Burgueno, G. Engels, J. Galasso, J.-M. Jézéquel, B. Kemme, S. Mosser, H. Sahraoui, M. Schiedermeier, and E. Syriani, "Global decision making over deep variability in feedback-driven software development," in *Proceedings of the 37th IEEE/ACM International Conference on Automated Software Engineering*, ASE '22, (New York, NY, USA), Association for Computing Machinery, 2023.

[148] R. Saini, G. Mussbacher, J. L. C. Guo, and J. Kienzle, "Machine learning-based incremental learning in interactive domain modelling," in *Proceedings of the 25th International Conference on Model Driven Engineering Languages and Systems*, MODELS '22, (New York, NY, USA), p. 176â186, Association for Computing Machinery, 2022.

[149] Y. Shi, J. Kienzle, and J. L. C. Guo, "Feature-oriented modularization of deep learning apis," in *4th MDE Intelligence Workshop, Proceedings of the 25th International Conference on Model-Driven Engineering Languages and Systems: Companion Proceedings*, MODELS '22, (New York, NY, USA), p. 367â374, Association for Computing Machinery, 2022.

Thesis and Refereed Poster Presentations

[150] J. Kienzle, "Network Applications in Ada 95," Master's thesis, Swiss Federal Institute of Technology, Lausanne, Switzerland, March 1997.

[151] J. Kienzle, *Open Multithreaded Transactions: A Transaction Model for Concurrent Object-Oriented Programming*. PhD thesis, Swiss Federal Institute of Technology, Lausanne, Switzerland, April 2001.

[152] J. Kienzle, "Object Persistence: A Framework Based on Design Patterns." Poster presented at the 14th European Conference on Object–Oriented Programming – ECOOP 2000, Cannes, France, June 2000.

[153] C. Cañas, K. Zhang, B. Kemme, J. Kienzle, and H.-A. Jacobsen, "A publish/subscribe network engine testbed for multiplayer games," in *Proceedings of the Posters & Demos Session*, Middleware Posters and Demos '14, (New York, NY, USA), pp. 19–20, ACM, 2014.

Technical Reports and Other Unrefereed Publications

[154] Y. Yu, A. Bachand, and J. Kienzle, "Comparing Different AOP Approaches," Tech. Rep. SOCS-TR-2004.7, McGill University, Montreal, Canada, November 2004.

[155] J. Kienzle and S. Sendall, "Addressing Concurrency in Object-Oriented Software Development," Tech. Rep. SOCS-TR-2004.8, McGill University, Montreal, Canada, December 2004.

[156] D. Stein, J. Kienzle, and M. Kandé, "5th International Workshop on Aspect-Oriented Modeling," in *UML Modeling Languages and Applications*, no. 3297 in Lecture Notes in Computer Science, pp. 13 – 22, Springer Verlag, February 2005.

[157] J. Kienzle, J. Gray, and D. Stein, "Report of the 7th International Workshop on Aspect-Oriented Modeling," in *Satellite Events at the MoDELS 2005 Conference, Montego Bay, Jamaica, October 2-9, 2005*, no. 3844 in Lecture Notes in Computer Science, pp. 91 – 99, Springer Verlag, January 2006.

[158] S. Mustafiz and J. Kienzle, "Addressing Dependability in Use Case Driven Requirements Elicitation," Tech. Rep. SOCS-TR-2006.3, McGill University, Montreal, Canada, February 2006.

[159] J. Kienzle, A. Denault, and J. Vybihal, "Be a Computer Scientist for a Week The McGill – Game Programming Guru Summer Camp," Tech. Rep. SOCS-TR-2006.4, Montreal, Canada, August 2006.

[160] J. Kienzle, D. Stein, W. Cazzola, J. Gray, O. Aldawud, and T. Elrad, "9th International Workshop on Aspect-Oriented Modeling," in *MoDELS 2006 Satellite Events Proceedings, Genova, Italy, October 1-8, 2006*, no. 4364 in Lecture Notes in Computer Science, pp. 1 – 5, Springer Verlag, February 2006.

[161] E. Duala-Ekoko and J. Kienzle, "AOP Challenge Part II: Lessons Learnt from Implementing a Reusable Aspect Framework," Tech. Rep. SOCS-TR-2007.1, McGill University, Montreal, Canada, February 2007.

[162] J. Kienzle and G. Bölükbaşi, "AspectOPTIMA: An Aspect-Oriented Framework for the Generation of Transaction Middleware," Tech. Rep. SOCS-TR-2008.4, McGill University, Montreal, Canada, December 2008.

[163] A. Denault, J. Kienzle, C. Dionne, and C. Verbrugge, "Object-oriented Network Middleware for Massively Multiplayer Online Games," Tech. Rep. SOCS-TR-2008.5, McGill University, Montreal, Canada, December 2008.

[164] J. Kienzle, N. Guelfi, and S. Mustafiz, "Crisis Management Systems – A Case Study for Aspect-Oriented Modeling," Tech. Rep. SOCS-TR-2009.3, McGill University, Montreal, Canada, February 2009.

[165] E. Syriani, J. Kienzle, and H. Vangheluwe, "Exceptional Transformations," Tech. Rep. SOCS-TR-2010.2, McGill University, Montreal, Canada, January 2010.

[166] C. Dragert, J. Kienzle, H. Vangheluwe, and C. Verbrugge, "Generating Extras: Procedural AI with Statechart," Tech. Rep. SOCS-TR-2011.1, McGill University, Montreal, Canada, March 2011.

[167] G. Mussbacher and J. Kienzle, "Integrating Aspect-Oriented Requirements and Design Models with AoURN and RAM," Tech. Rep. SOCS-TR-2011.2, McGill University, Montreal, Canada, April 2011.

[168] C. Dragert, J. Kienzle, and C. Verbrugge, "Reusable Components for Artificial Intelligence in Computer Games," Tech. Rep. SOCS-TR-2011.3, McGill University, Montreal, Canada, July 2011.

[169] O. Alam, J. Kienzle, and G. Mussbacher, "Concern-Driven Software Development," Tech. Rep. SOCS-TR-2015.1, McGill University, Montreal, Canada, January 2015.

Conference / Symposium / Workshop Keynote Speeches

- **16th Educator Symposium** of the 23rd ACM/IEEE International Conference on Model Driven Engineering Languages and Systems – **MODELS 2020**
  "Opportunities for Intelligent Modelling Assistants in Teaching", October 20th, 2020 (Virtual Conference Location).
- 2nd International **Workshop on Modularity in Modelling** at <Programming 2017>
  "Concern-Oriented Language Development", Brussels, April 3rd, 2017.
- **Modularity Symposium (co-located with <Programming 2017>)**
  "How to Combine MDE, AO and SPL to Create Generic, Crosscutting, Yet Modular Units of Reuse", Brussels, April 4th, 2017.
- **Conférence en Ingénierie du Logiciel / Génie de la Programmation et du Logiciel – CIEL / GPL 2012**
  "Model Reuse: A Success, the Vision and an Illustrating Example", Rennes, June 12th 2012.
- **Engineering of Fault-Tolerant Systems – EFTS 2006**
  "Exceptions and the Software Lifecycle: Starting with Requirements", Luxembourg Yes, June 13th 2006.
- **8th International Conference on Reliable Software Technologies, Ada-Europe 2003**
  "Software Fault Tolerance: An Overview", Toulouse, France, June 16th - 20th, 2003.

Panels

- **"Models – DOs and DONTS",** 13th International Conference on Model Driven Engineering Languages and Systems – **MoDELS 2010**, Oslo, Norway, October 2010.

Consulting / Tutorials

- October 2012: "Concern-Driven Development: Tool Supported Transformation of Requirements Models to Design Models", 3 hour tutorial at the 15th International Conference on Model Driven Engineering Languages and Systems – MODELS 2012, Innsbruck, Austria.
- September 2012: "Requirements Reuse with Concern-Driven Development", 3 hour tutorial at the 20th International Requirements Engineering Conference – RE 2012, Chicago, USA.

- August 2012: "Concern-Driven Development", 3 hour tutorial, Ottawa University, Ottawa, Canada.
- June 2006: "Software Fault Tolerance: An Overview", 3 hours tutorial, University of Luxembourg, Luxembourg.
- **Canadian Defence Research and Development**
  2-day Tutorial on Software Fault Tolerance, Valcartier, Quebec, Canada, December 2005.
- **Laboratory for Advanced Software Systems**
  Half-day Tutorial on Software Fault Tolerance, University of Luxembourg, Luxembourg, November 2004.

Invited Talks (not including conference paper presentation talks)

- "Concern-Oriented Reuse", Seminar, University of Malaga, Malaga, Spain, February 15th, 2023.
- "Unifying Software Reuse", 1st Workshop on Unifying Software Reuse at Bellairs, McGill Bellairs Research Institute, Barbados, February 16th, 2018.
- "VCU and CORE", 1st Workshop on Concern-Oriented Language Development, Bellairs Research Institute, Barbados, March 18th, 2017.
- "Instantiation Cardinalities", Research Seminar, Polytech Nice, Sophia Antipolis, June 27th, 2016.
- "How to Support Delaying of Decisions in CORE", Research Seminar, Polytech Nice, Sophia Antipolis, June 21st, 2016.
- "Concern-Oriented Reuse", I3S Seminar, Eurecom, Sophia Antipolis, April 14th, 2016.
- "Concern-Oriented Reuse", KIT, Karlsruhe, Germany, January 14th 2016.
- "Concern-Oriented Reuse", Seminar of the Diversity-Centric Software Engineering (DiverSE) group at INRIA Bretagne Atlantique, Rennes, France, September 16th 2015.
- "Concern-Oriented Reuse", Invited Talk at the Interdisciplinary Centre for Security, Reliability and Trust (SnT), University of Luxembourg, September 10th 2015.
- "Concern-Driven Software Development", Seminar du Département d'Informatique et de Recherche Operationelle (DIRO) de l'Université de Montréal, April 9th 2015.
- "Concern-Driven Development: The Vision", 1st CORE Workshop, Bellairs Research Institute, Barbados, February 1st 2015.
- "Concern-Driven Development", Laboratory for Research on Technology for ECommerce (LATECE) Seminar, Université du Quebec a Montreal, November 26th, 2014.
- "Model Interfaces", 5th Bellairs Workshop on Modeling, Bellairs Research Institute, Barbados, February 9th 2013.
- "CORE Models of the bCMS", 4th Workshop on Aspect-Oriented Modeling, Bellairs Research Institute, Barbados, April 29th 2012.
- "From Aspect-Oriented Requirements Models to Aspect-Oriented Design Models", 3rd Workshop on Aspect-Oriented Modeling, Bellairs Research Institute, Barbados, April 17th 2011.
- "Aspect-Oriented Design of a Crisis Management System", 2nd Workshop on Aspect-Oriented Modeling, Bellairs Research Institute, Barbados, April 12th 2010.
- "Aspect-Oriented Design of a Crisis Management System", 14th Workshop on Aspect-Oriented Modeling, Denver, Colorado, USA, October 4th 2009.
- "Aspect-Oriented Multi-View Modeling", Canadian Undergraduate Software Engineering Conference (CUSEC 2009), Montreal, Canada, January 23rd 2009.

- "Aspect-Oriented Multi-View Modeling", Computing Department, Lancaster University, Lancaster, UK, December 2008.
- "Aspect-Oriented Multi-View Modeling", Laboratory for Advanced Software Systems, University of Luxembourg, Luxembourg, December 2008.
- "Aspect-Oriented Multi-View Modeling", CORRECT Workshop, Newcastle Upon Type, UK, November 2008.
- "Overview of AspectOPTIMA", Laboratory for Advanced Software Systems, University of Luxembourg, Luxembourg, June 2007.
- "Dependability-Driven Requirements Engineering with Use Cases", Laboratory for Advanced Software Systems, University of Luxembourg, Luxembourg, May 2007.
- "Aspects of Aspect-Orientation", Workshop on Computer Automated Multi-Paradigm Modeling (CAMPaM), Bellairs Research Institute, Barbados, April 2007.
- "Aspect-Oriented Challenge: Implementing the ACID properties for Transactional Objects", Dagstuhl Seminar on "Atomicity: A Unifying Concept in Computer Science", Dagstuhl, Germany, March 2006.
- "AO Case Study: Implementing the ACID properties for Transactional Objects", Aspect-Orientation Workshop, CASCon, Toronto, Canada, October 2005.
- "Mammoth, a Massively Multiplayer Game Research Framework", 1st International North American Conference on Intelligent Games and Simulation – GameOn'NA 2005, Montreal, Canada, August 2005.
- "Massively Multiplayer Games", McGill Bellairs Computer Games Workshop, Barbados, March 2005.
- "Addressing Concurrency During Software Development", Dagstuhl Seminar on "Atomicity in System Design and Execution", Dagstuhl, Germany, April 2004.
- "Looking Ahead in Open Multithreaded Transactions", Dagstuhl Seminar on "Atomicity in System Design and Execution", Dagstuhl, Germany, April 2004.
- "Separating Concurrency and Failure Concerns Using Aspect-Oriented Programming Techniques", **IBM T.J. Watson Research Center**, New York, USA, March 2003.
- "Separating Concurrency and Failure Concerns using Aspect-Oriented Programming", Département d'Informatique et de Recherche Opérationnelle, Université de Montréal, February 2003.
- "On Composition and Reuse of Aspects", Workshop on Foundations of Aspect-Oriented Languages, International Conference on Aspect-Oriented Software Development – AOSD 2003, Boston, USA, March 2003.

Professional Activities

Editorial Board

- Software and Systems Modelling Journal, Springer
- The Journal of Object Technology, AITO

Editor

- Special Issue with extended versions of the best papers of MODELS 2016 of the Journal Software and Systems Modelling – SoSyM, 2018.
- Special Issue with extended versions of the best papers of Modularity:AOSD 2013 of the Journal Transactions on Aspect-Oriented Software Development – TAOSD, volume 11, 2014, Spinger, April 2014.
- Conference Proceedings of Modularity:AOSD 2013, the 11th International Conference on Aspect-Oriented Software Development, Fukuoka, Japan, March 24th - 29th, 2013.

- Associate Editor of the Software and Systems Modelling Journal – SoSyM since 2012.

- "Models in Software Engineering", best papers of the workshops of the 15th International Conference on Model Driven Engineering Languages and Systems – MODELS 2011, LNCS volume 7167, Springer, March 2012.

- Special Issue on "A Common Case Study for Aspect-Oriented Modeling" of the Journal Transactions on Aspect-Oriented Software Development – TAOSD, volume 7, 2010.

- Editor of a Special Issue of the Journal of Object Technology on "Aspect-Oriented Modeling", JOT Volume 6, Number 7, August 2007.

Steering Committees

- International Conference on Model-Driven Engineering Languages and Systems since 2013

- International Conference on the Art, Science, and Engineering of Programming, 2016 - 2017

- International Conference on Modularity:AOSD, 2013 - 2016

Organizing Committees

- 1st Workshop on Polyglot Software Development, McGill Bellairs Research Institute, Barbados, January 20th - January 27th, 2023.

- 1st Workshop on Feedback-Driven Software Development, McGill Bellairs Research Institute, Barbados, April 15th - April 22nd, 2022.

- 2nd Workshop on Data and Models – Towards Intelligent Modelling Environments, McGill Bellairs Research Institute, Barbados, February 7th - February 14th, 2020.

- Workshop Chair of the 22nd International Conference on Model Driven Engineering Languages and Systems – **MoDELS 201**9, Munich, Germany, September 15th - 20th, 2019.

- 1st Workshop on Data and Models at Bellairs, McGill Bellairs Research Institute, Barbados, February 1st - February 8th, 2019.

- 1st Workshop on Unifying Software Reuse at Bellairs, McGill Bellairs Research Institute, Barbados, February 16th - February 23rd 2018.

- Workshop Chair of the 1st International Conference on the Art, Science, and Engineering of Programming, Brussels, Belgium, April 3rd - 7th, 2017.

- 1st Workshop on Language Reuse at Bellairs, McGill Bellairs Research Institute, Barbados, March 17th - March 24th 2017.

- Program Chair of the 19th International Conference on Model Driven Engineering Languages and Systems – MODELS 2016, St. Malo, France, October 2nd - 7th, 2016.

- Modularity in Modelling Workshop – MOMO 2016, Malaga, Spain, March 15th, 2016.

- 1st Modelling for Sustainability Workshop at Bellairs, McGill Bellairs Research Institute, Barbados, February 11th - February 18th 2016.

- 1st Concern-Oriented Reuse Workshop at Bellairs, McGill Bellairs Research Institute, Barbados, January 30th - February 6th 2015.

- "Modelling Outside the Box" Panel at the 17th International Conference on Model Driven Engineering Languages and Systems – MODELS 2014, Valencia, Spain, September 28th - October 3rd, 2014.

- 1st Modeling Outside the Box Workshop at Bellairs, McGill Bellairs Research Institute, Barbados, February 7th - February 14th 2014.

- 4th Workshop on Comparing Modelling Approaches – CMA 2013, Miami, Florida, October 1st, 2013.
- Tutorial Chair of the 16th International Conference on Model Driven Engineering Languages and Systems – MODELS 2013, Miami, Florida, September 29th - October 4th, 2013.
- Program Chair of Modularity:AOSD 2013, the 11th International Conference on Modularity:Aspect-Oriented Software Development, Fukuoka, Japan, March 24th - 29th, 2013.
- 5th Modeling Workshop at Bellairs, McGill Bellairs Research Institute, Barbados, February 8th - February 15th 2013.
- 2nd Workshop on Comparing Modelling Approaches – CMA 2012, Innsbruck, Austria, September 30th, 2012.
- 5th International Workshop on Exception Handling – WEH 2012, Zürich, Switzerland, June 9th, 2012.
- 4th Aspect-Oriented Modeling Workshop at Bellairs, McGill Bellairs Research Institute, Barbados, April 28th - May 3rd 2012.
- International Workshop on Next Generation Modularity Approaches for Requirements and Architecture – NEMARA, Potsdam, Germany, March 25th, 2012.
- **Workshop Chair** of the 14th International Conference on Model Driven Engineering Languages and Systems – **MoDELS 2011**, Wellington, New Zealand, October 16th - 21st, 2011.
- 3rd Aspect-Oriented Modeling Workshop at Bellairs, McGill Bellairs Research Institute, Barbados, April 15th - April 22nd 2011.
- 2nd Aspect-Oriented Modeling Workshop at Bellairs, McGill Bellairs Research Institute, Barbados, April 11th - April 18th 2010.
- 1st Aspect-Oriented Modeling (AOM) Workshop at Bellairs, McGill Bellairs Research Institute, Barbados, April 5th - April 12th 2009.
- 4th International Workshop on Exception Handling, WEH'08, co-located with FSE 2008, Atlanta, Georgia, November 14th 2008.
- Aspect-Oriented Modeling (AOM) Workshops Series
  I have been the co-organizer of 15 workshops on aspect-oriented modeling [156, 157, 160]. The series started at the first International Conference on Aspect-Oriented Software Development, Enschede, The Netherlands, 2002, and has continued ever since. The workshop is usually held biannually, one at the AOSD conference and the other one at the UML/MoDELS conference, since the workshop is intended to bridge the two communities.

  - 1st Workshop on Aspect-Oriented Modeling with UML, co-located with AOSD 2002, Enschede, The Netherlands, April 2002.
  - 2nd Workshop on Aspect-Oriented Modeling with UML, co-located with UML 2002, Dresden, Germany, September 2002.
  - 3rd Workshop on Aspect-Oriented Modeling with UML, co-located with AOSD 2003, Boston, MA, USA, March 2003.
  - 4th Workshop on Aspect-Oriented Modeling with UML, co-located with UML 2003, San Francisco, CA, USA, September 2003.
  - 5th Workshop on Aspect-Oriented Modeling, co-located with UML 2004, Lisbon, Portugal, September 2004 [156].
  - 6th Workshop on Aspect-Oriented Modeling, co-located with AOSD 2005, Chicago, IL, USA, March 2005.
  - 7th Workshop on Aspect-Oriented Modeling, co-located with MoDELS 2005, Montego Bay, Jamaica, September 2005 [157].
  - 8th Workshop on Aspect-Oriented Modeling, co-located with AOSD 2006, Bonn, Germany, March 2006.

- 9th Workshop on Aspect-Oriented Modeling, co-located with MoDELS 2006, Genova, Italy, September 2006 [160].
  - 10th Workshop on Aspect-Oriented Modeling, co-located with AOSD 2007, Vancouver, BC, Canada, March 2007.
  - 11th Workshop on Aspect-Oriented Modeling, co-located with MoDELS 2007, Nashville, TN, USA, September 2007 [59].
  - 12th Workshop on Aspect-Oriented Modeling, co-located with AOSD 2008, Brussles, Belgium, April 1st, 2008.
  - 13th Workshop on Aspect-Oriented Modeling, co-located with AOSD 2009, Charlottesville, Virginia, USA, March 2nd, 2009.
  - 14th Workshop on Aspect-Oriented Modeling, co-located with MoDELS 2009, Denver, Colorado, USA, October 4th, 2009.
  - 15th Workshop on Aspect-Oriented Modeling, co-located with MoDELS 2010, Oslo, Norway, October 4th, 2010.

- 4th North American Conference on Intelligent Games and Simulation – GameOn'NA 2008, Montreal, Canada, August 2008.
- 1st North American Conference on Intelligent Games and Simulation – GameOn'NA 2005, Montreal, Canada, August 2005.
- McGill Bellairs Computer Games Workshop, McGill Bellairs Research Institute, Barbados, March 27th - April 3rd 2005.
- Workshop on Exception Handling for 21st Century Programming Languages, collocated with the 6th International Conference on Reliable Software Technologies - Ada-Europe 2001, Leuven, Belgium, May 2000.

Conference Program Committees

- 19th European Conference on Modelling Foundations and Applications – ECMFA 2023, Leicester, United Kingdom, July 17th - 21st, 2023.
- 25th International Conference on Model Driven Engineering Languages and Systems – **MODELS 2022**, Montreal, Canada, October 23rd - 28th, 2022.
- 15th International Conference on Software Language Engineering – SLE 2022, Auckland, New Zealand, December 5th - 10th, 2022.
- 18th European Conference on Modelling Foundations and Applications – ECMFA 2022, Nantes, France, July 6th - 7th, 2022.
- 24th International Conference on Model Driven Engineering Languages and Systems – **MODELS 2021**, Fukuoka, Japan, October 10th - 15th, 2021.
- 17th European Conference on Modelling Foundations and Applications – ECMFA 2021, Bergen, Norway, June 21st - 25th, 2021.
- 23rd International Conference on Model Driven Engineering Languages and Systems – **MODELS 2020**, Montreal, Canada, October 16th - 23rd, 2020.
- 22nd International Conference on Model Driven Engineering Languages and Systems – **MODELS 2019**, Munich, Germany, September 15th - 20th, 2019.
- 15th European Conference on Modelling Foundations and Applications – ECMFA 2019, Eindhoven, The Netherlands, July 15th - 19th, 2019.
- 21st International Conference on Model Driven Engineering Languages and Systems – **MODELS 2018**, Copenhagen, Denmark, October 14th - 19th, 2018.

- Special Session on Consistency in the View-based Development of Cyber-Physical Systems at Euromicro Conference on Software Engineering and Advanced Applications (SEAA) 2018, Prague, Czech Republic, August 29 – 31, 2018.

- 2nd International Conference on the Art, Science, and Engineering of Programming – <Programming 2018>, Nice, France, April 9th - 12th, 2018.

- 20th International Conference on Model Driven Engineering Languages and Systems – **MoDELS 2017**, Austin, Texas, September 17th - 22nd, 2017 (Program Board Member).

- 13th European Conference on Modelling Foundations and Applications – ECMFA 2017, Marburg, Germany, July 19th - 20th, 2017.

- 1st International Conference on the Art, Science, and Engineering of Programming – <Programming 2017>, Brussels, Belgium, April 3rd - 7th, 2017.

- 18th International Conference on Model Driven Engineering Languages and Systems – **MoDELS 2015**, Ottawa, Canada, September 29th - October 4th, 2015 (Program Board Member and Tutorial Selection PC).

- 17th International Conference on Model Driven Engineering Languages and Systems – **MoDELS 2014**, Valencia, Spain, September 28th - October 3rd, 2014.

- 28th European Conference on Object-Oriented Programming – ECOOP 2014, Uppsala, Sweden, July 28th - August 1st, 2014.

- Dependable and Adaptive Distributed Systems – DADS 2012, part of the 27th ACM Symposium on Applied Computing – SAC'12, Riva del Garda, Trento, Italy, March 25th - 29th, 2012.

- 14th International Conference on Model Driven Engineering Languages and Systems – **MoDELS 2011**, Wellington, New Zealand, October 16th - 21st, 2011.

- 7th European Conference on Modelling Foundations and Applications – ECMFA 2011, Birmingham, UK, June 6th - 9th, 2011.

- 13th International Conference on Model Driven Engineering Languages and Systems – **MoDELS 2010**, Oslo, Norway, October 3rd - 8th, 2010.

- 6th European Conference on Modelling Foundations and Applications – ECMFA 2010, Paris, France, June 15th - 18th, 2010.

- 5th North American Conference on Intelligent Games and Simulation – GameOn'NA 2009, Atlanta, USA, August 26th - 28th, 2009.

- 4th International Conference on E-Learning and Games – Edutainment 2009, August 9-11, 2009, Banff, Canada.

- FuturePlay 2007, Toronto, Canada, November 2007.

- 10th International Conference on Model Driven Engineering Languages and Systems – **MoDELS 2007**, Nashville, TN, USA, October 2007.

- 12th International Conference on Reliable Software Technologies – Ada-Europe 2007, Geneva, Switzerland, June 2007.

- FuturePlay 2006, October 2006.

- 9th International Conference on Model Driven Engineering Languages and Systems – **MoDELS 2006**, Genova, Italy, October 2006.

- 11th International Conference on Reliable Software Technologies – Ada-Europe 2006, Porto, Portugal, June 2006.

- Engineering of Fault-Tolerant Systems – EFTS 2006, Luxembourg, June 2006.

- Fifth International Conference on Aspect-Oriented Software Development – **AOSD 2006**, Bonn, Germany, March 2006.

- 10th International Conference on Reliable Software Technologies – Ada-Europe 2005, York, UK, June 2005.

- 7th International Conference on the Unified Modeling Language – **UML 2004**, Lisbon, Portugal, October 2004.

- 9th International Conference on Reliable Software Technologies – Ada-Europe 2004, Palma de Mallorca, Spain, June 2004.

- 8th International Conference on Reliable Software Technologies – Ada-Europe 2003, Toulouse, France, June 2003.

- 7th International Symposium on Distributed Objects and Applications – DOA 2002, Irvine, CA, USA, October 2002.

- 6th International Conference on Reliable Software Technologies – Ada-Europe 2002, Vienna, Austria, June 2002.

- 5th International Conference on Reliable Software Technologies – Ada-Europe 2001, Leuven, Belgium, May 2001.

Workshop Program Committees

- 1st International Workshop on View-Oriented Software Engineering (VoSE), Munich, Germany, September 15th, 2019.

- 4th International Workshop on Software Product Line Teaching – SPLTea, Paris, France, September 9th, 2019.

- Third International Workshop on Software Product Line Teaching – SPLTea, Gothenburg, Sweden, September 10th, 2018.

- Workshop on Methodical Development of Modelling Tools – ModTools'16, Vienna, Austria, September 5th-6th, 2016.

- Model-Driven Requirements Engineering Workshop – MoDRE 2014, Karlskrona, Sweden, August 25th 2014.

- 5th International Workshop on Software Engineering for Resilient Systems – SERENE 2013, Kiev, Ukraine, October 3rd - 4th, 2013.

- International Workshop on The Globalization of Modeling Languages – GEMOC 2013, September 29, 2013, Miami, Florida, USA.

- 3rd Workshop on Comparing Requirements Modelling Approaches, Rio de Janeiro, Brazil, July 16th, 2013.

- 1st Workshop on View-Based, Aspect-Oriented and Orthographic Software Modelling – VAO 2013, Montpellier, France, July 2nd, 2013.

- 5th Workshop on Behavioural Modelling - Foundations and Applications – BM-MFA 2013, Montpellier, France, July 2nd, 2013.

- 3rd International Workshop on Software Engineering for REsilient SystEms – SERENE 2011, Geneva, Switzerland, September, 2011.

- Model-Driven Requirements Engineering Workshop – MoDRE 2011, Trento, Italy, August 29th, 2011.

- 3rd Workshop on Behavioural Modelling - Foundations and Applications, Birmingham, UK, June 6th, 2011.

- 1st Workshop on Exception Handling in Contemporary Software Systems – EHCoS 2011, São Paulo, Brazil, April 25th, 2011.

- First International Workshop on Dependable Services and Systems – IWoDSS 2010, Montreal, Canada, May 17th - May 18th, 2010.

- 2nd International Workshop on Software Engineering for REsilient SystEms – SERENE 2010, Birkbeck College, London, UK, April 13th - April 16th, 2010.

- First International Workshop on Composition: Objects, Aspects, Components, Services and Product Lines – Composition & Variability – VariComp 2010, Rennes, France, March 15th 2010.
- 8th Workshop on Aspects, Components, and Patterns for Infrastructure Software – AC4PIS 2009, co-located with the 8th International Conference on Aspect-Oriented Software Development, Charlottesville, Virginia, USA, March 2nd 2009.
- International Workshop on Software Engineering for REsilient SystEms (SERENE 2008), Newcastle upon Tyne, United Knigdom, November 17 - 19, 2008.
- 2nd International Workshop on Aspects, Dependencies and Interactions, co-located with the 21st European Conference on Object-Oriented Programming, Berlin, Germany, July 2007.
- Next Generation Aspect Oriented Middleware Workshop (NAOMI 2008), Brussels, Belgium, March 2008.
- 1st Technical Session on Engineering of Software Fault-Tolerance – EngSoFT 2007, co-located with the 2007 International Conference on Software Engineering Research and Practice, Las Vegas, Nevada, USA, June 2007.
- 1st International Workshop on Aspects, Dependencies and Interactions, co-located with the 20th European Conference on Object-Oriented Programming, Nantes, France, July 2006.
- 4th International Workshop on Scientific Engineering of Distributed Java Applications – FIDJI 2004, Luxembourg, November 2004.

Other Refereeing

- 1 CFI Grant Review, Canadian Foundation for Innovation, Canada.
- 1 Grant Review for The Netherlands Organisation for Scientific Research (NWO), The Netherlands.
- 1 ANR Grant Review for the Agence Nationale de la Recherche, France.
- 1 Grant Review for the Austrian Science Foundation (FWF), Austria.
- 11 NSERC Discovery Grant Reviews, National Sciences and Engineering Research Council, Canada.
- "Bourse de Formation-Recherche", Department of Scientific Research and Applied Research of the Ministry of Culture, Higher Education and Research of Luxembourg, Luxembourg
- Project Grant Review for the Fond National du Luxembourg, Luxembourg
- Reviewed 12 proposals for the McGill Collaborative Research Development Seed Fund (for the OVPRIR)
- 2 Articles for the ACM Transactions on Programming Languages and Systems Journal (TOPLAS)
- 9 Articles for the Transactions on Aspect-Oriented Software Development Journal (TAOSD)
- 10 Articles for the Software and Systems Modeling Journal (SoSyM)
- 3 Articles for the Software Practice and Experience Journal (SP&E)
- 3 Articles for the Journal of Object Technology (JOT)
- 1 Article for the Transactions on Dependable and Secure Computing Journal (TDSC)
- 4 Articles for the Transactions on Software Engineering Journal (TSE)
- 2 Articles for IEEE Software
- 1 Article for the Journal on Empirical Software Engineering (EMSE)
- Review of a two book chapters in "Methods, Models and Tools for Fault Tolerance", published by Springer.
- Review of a book chapter in "Engineering of Fault-Tolerant Systems", published by Springer.

Other Professional Activities

- Mentor for the Doctoral Symposium at the 9th International Conference on Model Driven Engineering Languages and Systems – MoDELS 2006, Genova, Italy, October 2006.
- Mentor for the Doctoral Symposium at the 8th International Conference on Model Driven Engineering Languages and Systems – MoDELS 2005, Montego Bay, Jamaica, October 2005.

Graduate Supervision

Supervised Ph.D. Students

Total: 9

2019 - present   Maximilian Schiedermeier (co-supervised with Bettina Kemme)

2018 - 2022   Hyacinth Ali (co-supervised with Gunter Mussbacher)

2018 - 2022   Rijul Saini (co-supervised with Gunter Mussbacher)

2013 - 2019   Matthias Schöttle: "Model-Based Reuse of Framework APIs: Bridging the Gap Between Models and Code"

2011 - 2016   Julien Gascon-Samson: "Massively Multiplayer Game Middleware for the Cloud" (co-supervised with Bettina Kemme)

2008 - 2016   Wisam Al Abed: "Reusable Software Design Concern Models"

2012 - 2016   Omar Alam: "Concern-Oriented Reuse: A Software Reuse Paradigm"

2008 - 2014   Chris Dragert: "Model-Driven Development of AI for Digital Games" (co-supervised with Clark Verbrugge)

2006 - 2010   Alexandre Denault: "Journey, A Shared Virtual Space Middleware"

2004 - 2010   Sadaf Mustafiz: "Dependability-Driven Requirements Engineering for Reactive Systems"

Supervised Master Students

Total: 66

2021 - 2022   Mainak Mukherjee: "Text Document Modelling Language"

2021 - present   Mohsen Hosseinibaghdadabadi

2021 - 2022   Ryan Languay: "Concern-Oriented Use Cases"

2020 - 2022   Violet Yechuan Shi: "A Concern for Artificial Intelligence Frameworks"

2020 - 2022   Nikolas Gordon: "Classroom Support for TouchCORE" (co-supervised with Omar Alam)

2020 - 2021   Linwei Xu: "Websocket Interface for TouchCORE"

2020 - 2021   Qiutan Wu: "Environment Model Language"

2019 - 2021   Ting Gu: "Exploring Views in Graph Database Systems" (co-supervised with Bettina Kemme)

2019 - 2021   Ian Gauthier: "Generic Navigation of Concern-Oriented Modelling Languages" (co-supervised with Gunter Mussbacher)

2019 - 2020   Weiyi Bian: "Automated Grading of Class Diagrams"

2019 - 2020   Bo Dang: "Code Generation for Concern-Oriented Class Diagrams"

2019 - 2020   Jingyuan Wang: "Concern-Oriented Use Case Maps"

2019 - 2020   Yuqian Zao: "Generic Validation for TouchCORE"

2019 - 2019   Arthur Le Saint: "Multi-user Backend for TouchCORE"

2019 - 2019   Josué Collombier: "WebCORE"

2018 - 2019   Yusi Xu: "Navigation Support for TouchCORE"

2018 - 2019   Rotsy Razafimanantoanina: "Grading Support for Class Diagrams"

2018 - 2018   Jehan Milleret: "Mapping Cardinalities for Concern-Oriented Reuse"

2017 - 2019   Yanis Hattab: "Multi-View Concern-Oriented Reuse"

2016 - 2018   Nirmal Kanagasabai: "Collaborative Concern Development"

2016 - 2018   Rohit Verma: "Design Modelling with Java Support"

2016 - 2018   Cheuk Chuen Siow: "Concern-Oriented Use Case Maps"

2016 - 2017   Andrea Pissinis: "Navigation in Concern-Oriented Software Development"

2014 - 2016   Celine Bensoussan: "Associations in MDE: A Concern-Oriented, Reusable Solution"

2015 - 2015   Cecile Camillieri: "Adding Support for Feature Reexposition to Concern-Oriented Reuse"

2015 - 2015   Romain Alexandre: "Extending Feature Models to Support Impact Propagation for Concern-Oriented Reuse"

2015 - 2015   Guillaume Nicolas: "Multi-Touch-Enabled Circular Menus and Contextual Menus"

2014 - 2015   Nishanth Thimmegowda: "Feature-Oriented Concern Composition"

2014 - 2014   Thomas Di'Meco: "Object-Oriented Code Generation for TouchRAM"

2014 - 2014   Laura Martellotto: "OCL-Based Constraint Verification for TouchRAM"

2013 - 2014   Sunit Bhalotia: "Aspect-Oriented Modelling with Instantiation Cardinalities"

2013 - 2014   Jonathan Schoreels: "AI Techniques for Learning NPC Behaviour in Mammoth"

2012 - 2013   Thang Tran: "A Message-View Editor for TouchRAM"

2012 - 2013   Abir Ayed: "Protocol Modelling for Reusable Aspect Models"

2012 - 2013   Emil Dafinov: "Documenting Framework Interfaces with Reusable Aspect Models"

2012 - 2013   Engin Yildirim: "A Multi-Touch Interface for Aspect-Oriented Modelling"

2012 - 2013   Subtain Pervaiz: "Automated Class Diagram Layout for TouchRAM"

2012 - 2012   Matthias Schöttle: "Sequence Diagram Weaving Support for Reusable Aspect Models"

2011 - 2012   Hammad Ullah Khan: "Distributed Monitoring of Virtual Worlds"

2011 - 2012   Marc Shakour: "Comparing Triangle-Based Pathfinding Algorithms"

2010 - 2012   James Jie: "Smooth Camera Movements for Mammoth"

2009 - 2011   Onur Duman: "Account Creation and Login Facilities for Mammoth" (co-supervised with Bettina Kemme)

2009 - 2010   Max Kramer: "Mapping Reuable Aspect Models to Aspect-Oriented Code", exchange student from Karlsruhe Institute of Technology, Germany

2006 - 2010   Samuel Gélineau: "Commutative Composition: a Conservative Approach to Aspect Weaving" (co-supervised with Brigitte Pientka)

2008 - 2009   Yanwar Asrigo: "Communication Middleware for a Web-based Game Lobby" (co-supervised with Clark Verbrugge and Bettina Kemme)

2007 - 2008   Eric Thul: "Measuring the Complexity of Musical Rhythm" (co-supervised with Godfried Toussaint)

2007 - 2008   Dominik Zindel: "Postina, a Publish/Subscribe Middleware for Massively Multiplayer Games", exchange student from the University of Fribourg, Switzerland

2006 - 2008   Michael Hawker: "Consistency of Subgames in Virtual Worlds"

2005 - 2008   Muhammad Jamal Sheik: "Exception Handling in Software Analysis"

2005 - 2007   Jonathan Li On Wing: "Memory for Storing Player Behavior in Massively Multiplayer Games" (co-supervised with Prof. Doina Precup)

2005 -2007   Adrian Ghizaru: "Learning Player Behavior in Massively Multiplayer Games" (co-supervised with Prof. Doina Precup)

2005 - 2007   Güven Bolukbasi: "AspectOPTIMA: Aspectual Composition of Transaction Models"

2005 - 2007   Xun Zhu: "Ensuring Consistency and Deadlock-Freeness in Concurrent System Designs"

2005 - 2007   Zheng Pan: "Design of an Interactive Multimedia Application for the Redpath Museum Mummy Exhibit"

2004 - 2006   Ekwa Duala-Ekoko: "Evaluating the Expressivity of AspectJ in Implementing a Reusable Framework for the ACID Properties of Transactional Objects"

2004 - 2006   Jean-Sebastien Boulanger: "Interest Management for Massively Multiplayer Games"

2004 - 2006   John Beekler: "Game Consoles on FPGAs" (co-supervised with Warren Gross)

2004 - 2005   Aaron Shui: "Exceptional Use Cases"

2004 - 2005   Alexandre Denault: "Minueto, a Game Development Framework"

2004 - 2005   Maxime Monod: "Looking Ahead in Open Multithreaded Transactions"
(exchange student from the Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland)

2005   Pierre Marieu: "Mammoth: Developing the Logic Engine"
(exchange student from Ecole Centrale de Nantes, France)

2004 - 2005   Sherif Refaat Shaker: "Graphical User Interface Framework for COMP-361"

2004 - 2005   Jianguo Ma: "Evaluation of Different Aspect-Oriented Programming Techniques"

2003 - 2004   Jie Xiong: "Addressing Concurrency using a UML-Based Software Development Method"

2003 - 2004   Roger McFarlane: "Network Software Architecture for Massively Multiplayer Games"

2003 - 2004   Sadaf Mustafiz: "Integrating Fault Tolerance into Software Development: A Comprehensive Survey"

2003 - 2004   Shen Li: "Aspect-Oriented Persistence for Transactional Objects"

2002 - 2003   Xuechun Lu: "Optimistic Concurrency Control for OPTIMA"

Supervised Undergraduate Summer or Semester Projects

Total: 74

Fall 2022   Nicolas Almerge: "Automated Grading of Student Modelling Assignments"

Summer 2022   Nika Prairie: "Concern-Oriented Use Cases for Elfensea"

Fall 2021   Ridwan Kurmally: "Adding user login support to REST interface of WebCORE"

Summer 2021   Tianhua Zhang: "RESTification of CORE"

Summer 2021   Joseph Horeczy: "RESTification of WebCORE"

Summer 2021   Ian Tsai: "M1 Support for MT4J"

Summer 2021   Greta Freitag: "Environment Model Weaver"

Winter 2021   Jifeng Wang: "Palladio Support for CORE"

Winter 2021   Justin Jiang: "Classdiagram Support in TouchCORE"

Fall 2020   Muhang Li: "Unity frontend for TouchCORE"

Fall 2020   Jifeng Wang: "Integration of Palladio Metamodel into CORE"

Fall 2020   Bowen Li: "Generic Split-View for TouchCORE"

Summer 2020   Ryan Languay, SURA: "Concern-Oriented Use Cases"

Summer 2020   Bowen Li: "REST GUI editor for TouchCORE"

Summer 2020   Tingyu Shen: "Generic Split-View for TouchCORE"

Summer 2020	Yong Zhang, SURA: "Classroom Support for TouchCORE"
Winter 2020	Stacey Beard: "Concern-Oriented Design Patterns Revisited"
Winter 2020	Owen Bai: "OCL Invariants for Concern-Oriented Languages"
Summer 2019	Violet Yechuan Shi: "Split View for Class Diagram Grading"
Winter 2019	Caleb Zhang: "Aspect-Oriented Use Cases"
Winter 2019	Tony Chen: "Multi-touch Enabled Sequence Diagram Editor"
Winter 2019	Anaelle Bitton: "Concern-Oriented Sequence Diagram Metamodel"
Winter 2019	Maksim Bober: "Model Transformations with Episolon within TouchCORE"
Fall 2018	Maksim Bober: "Extended Support for Java Expressions in TouchCORE"
Fall 2018	Ke Zhang, Ali El-Hage: "Reusable Fuzzy Logic for Game AI"
Fall 2017	Gavin McCracken: "Detecting GameBots by Applying AI Algorithms to Analyze Mouse Movements"
Summer 2017	Emmanuel Ng, NSERC-USRA: "Flexible Message Views for TouchCORE"
Summer 2017	Alec Harmon: "DataType Support for TouchCORE"
Winter 2017	Chengyu Sun: "Model-Driven Development of Computer Games"
Winter 2017	Jongwoo Shin: "3D Camera Zooming in TouchCORE"
Fall 2016	Tristano Tenaglia (co-supervised with Prof. Bettina Kemme): "Aspect-Oriented Approach for Publishing on a Pub-Sub Server"
Fall 2016	Aaron Uthayagumaran (co-supervised with Prof. Bettina Kemme), COMP-400: "CacheWise: Pub-Sub-Based Object Caching in the Cloud"
Fall 2016	Jianhua Li (co-supervised with Prof. Bettina Kemme): "Generalized Translation of JSON to Graph Database Queries"
Fall 2016	Woody Burns (co-supervised with Prof. Sabrina Leslie), PHYS-449: "Streamlining Software Design Modelling in TouchCORE through Automated and Assisted Layout"
Fall 2016	Mathieu Boucher (co-supervised with Prof. Gunter Mussbacher), COMP-396: "Automated JUnit Test Generation from Use Case Maps"
Winter 2016	Yanis Hattab (co-supervised with Prof. Gunter Mussbacher), COMP-400: "From AoUCM matchings to RAM composition rules"
Summer 2015	Jerry Wei (co-supervised with Prof. Gunter Mussbacher), COMP-396: "Use Case Map Support for TouchCORE"
Fall 2014	Ashley Kim (co-supervised with Prof. Gunter Mussbacher): "Concern-Oriented Requirements Modelling of the Slot Machine Domain"
Fall 2014	Calem Bendell, COMP-400: "Concern-Oriented Modelling of GUI Framework Interfaces"

REFERENCES

REFERENCES

Winter 2014	Franz-Philippe Garcia (co-supervised with Prof. Bettina Kemme), COMP-400: "Implementation Class Support for TouchRAM"
Winter 2014	Zhenyi Huang, COMP-400: "Multi-touch Enabled File Browser"
Fall 2013/Winter 2014	UbiSoft Game Design Competition Supervision, COMP-396: Shao He, Alexander Selwood, YunJiing Tiang, Louis-Philippe Morel, Jérémie Bédard
Fall 2013	James Thornton, COMP-400: "Message View Editing for TouchRAM"
Fall 2012/Winter 2013	UbiSoft Game Design Competition Supervision, COMP-396: Nicolas Langley, Mehrdad Dehdashti, Nathaniel Blumer
Winter 2013	Benoit Hiller, COMP-396: "Chromium Browser Adaptor for the Eclipse Editor"
Fall 2012	Wesley Ellis, COMP-396: "Automating Test Suite Execution for the ReviewBoard Project"
Winter 2012	Valentin Bonnet, COMP-400: "Parametrizing Aspect-Oriented Models"
Fall 2011	Andrew Smart, COMP-400: "Migrating the RAM Multi-Touch Tool to MT4J"
Fall 2011	Valentin Bonnet, COMP-396: "Parameterizing RAM Parameters"
Summer 2011	Louis-Philippe Thibodeau-Bellemare, NSERC USRA: "Adding Lights and Water to Mammoth"
Summer 2011	Etienne Perot, USRA: "Migrating the Mammoth Graphics to JMonkey 3.0"
Winter 2011	Andrew Smart, COMP-396: "A Multi-Touch Interface for the Reusable Aspect Models Tool"
Winter 2010	Hussein Danish, Hussein Slimani, ECSE-476: "Implementing a Meta Model-Based Graphical Editor in Eclipse - Implementation"
Winter 2010	Max Kramer, COMP-400, "Extending AspectOPTIMA to support Open Multithreaded Transactions"
Winter 2010	Max Kramer, COMP-396, "@AspectOPTIMA - Implementing Reusable Aspect Models in AspectJ"
Fall 2009	Hussein Danish, Hussein Slimani, ECSE-475: "Implementing a Meta Model-Based Graphical Editor in Eclipse - Design"
Winter_2009	Jonathan Pullano: "Triangle-based Path Finding in Mammoth"
Winter 2009	Rob Rolnick, George Ciobanu and Scott McMurray: "Heightmaps for Mammoth - Implementation"
Fall 2008	Rob Rolnick, George Ciobanu and Scott McMurray: "Heightmaps for Mammoth - Design"
Summer 2008	Amy Goldenberg and Ashton Anderson: "Speech Recognition for Mammoth"
Summer 2007	Alexander Thompson: "Delauney Triangularization for Mammoth"
Winter 2007	Ting Sun, ECSE-495: "User Interface Frameworks for OpenGL"
Winter 2007	Wisam Al Abed, ECSE-495: "Porting Feng GUI to Minueto GL"
Winter 2006	Karim El Said, Honors Project: "Web-accessible Study Schedule Planner"
Winter 2006	Michael Hawker, Honors project: "Mammoth - Item Infrastructure and Interface"

Winter 2006   Jeremy Claude, ECSE-495 project: "Mammoth - Content Editor Preview Window"

Winter 2006   Ovidiu Marc, ECSE-495 project: "Mammoth - Item Class Support in the Content Editor"

Winter 2006   Russell Spence, special Joint Physics / Computer Science Project: "Mammoth - Collision Detection in the Physics Engine"

Summer 2005   Samuel Gélineau, NSERC summer student: "Implementing Look-Ahead Support for Optima"

Winter 2005   Albert Bachand, Honors Project: "Comparing AspectJ and Hyper/J"

Winter 2005   David Adler, Honors Project: "Graphical Representation of Program Schedules"

Fall 2004   Marc Boscher, Honors Project: "Web Services on the Browser: an Alternate Web Application Architecture"

Summer 2003   Vikram Shetty, Honors Project: "Extended Study Schedule Planner"

Winter 2003   Caroline Kreuzinger, Honors Project: "Study Schedule Planner"

Service to the University

Department Committees

2002 - present   Software Engineering Committee

2009 - 2019   Ph.D. Committee

2003 - present   Exchange Student Advisor

2018 - present   Scholarship Committee

2019 - present   Hiring Committee

2016 - 2018   Master Committee

2005 - 2015   Web Committee

2004 - 2010   ACM Programming Contest Team Coach

2004 - 2010   School of Computer Science Colloquium Committee Chair

2003 - 2005   Webmaster

2003   Undergraduate Committee

Quebec Committees

2003 - 2009   Comité consultatif sur la Relève, FQRNT

Other University Activities

2004	Organizer of the ACM Programming Contest Northeast North American Regionals at McGill University
2006	Creator and Organizer of the "Game Programming Guru" Summer Camp, July 2006, McGill University
2008	Organizer of the "Game Programming Guru" Summer Camp, July 2008, McGill University

Examiner Activities

Internal Examiner Ph.D.

2004	Danielle Azar: "Genetic Algorithms for Building and Improving Software Quality Estimation Models", School of Computer Science, McGill University.
2005	Luz Abril Torres Mendez: "Statistics of Visual and Partial Range Data for Mobile Robot Environment Modeling", School of Computer Science, McGill University.
2007	Carlton Davis: "Security Protocols for Mobile Ad Hoc Networks", School of Computer Science, McGill University.
2007	Yin Lin: "Practical and Consistent Database Replication", School of Computer Science, McGill University.
Sept. 2008	Huaigu Wu: "Adaptable Stateful Application Server Replication", School of Computer Science, McGill University.
Nov. 2009	Eric Bodden: "Verifying finite-state properties of large-scale programs", School of Computer Science, McGill University.
April 2011	Eugene Syriani: "A Multi-Paradigm Foundation for Model Transformation Language Engineering", School of Computer Science, McGill University.
May 2011	Amin Atrash: "A Bayesian Framework for Online Parameter Learning in POMDPs", School of Computer Science, McGill University
June 2014	Amir Yahyavi: "On The Scalability and Security of Distributed Multiplayer Online Games", School of Computer Science, McGill University
March 2015	Rahul Garg: "A Toolkit for Building Dynamic Compilers for Array-Based Languages Targeting CPUs and GPUs", School of Computer Science, McGill University
September 2019	Erick Lavoie: "Personal Volunteer Computing", School of Computer Science, McGill University

External Examiner Ph.D.

Sept. 2008	Farida Mostefaoui: "Un Cadre Formel Pour le Développement Orienté Aspect: Modélisation et Vérification des Interactions due aux Aspect", Département d'Informatique et de Recherche Opérationelle, Université de Montréal.
December 2008	Nelio Cacho: "Supporting Maintainable Exception Handling with Explicit Exception Channels", Computing Department, University of Lancaster, United Kingdom.

October 2009	Dewan Tanvir Ahmed: "Architectural Challenges and Solutions for Peer-to-peer Massively Multiuser Online Games", School of Information Technology and Engineering, University of Ottawa, Canada.
April 2010	Barbara Gallina: "Prisma: a software product line-oriented process for the requirements engineering of flexible transaction models", Faculté des Sciences, de la Technologie et de la Communication, Université du Luxembourg, Luxembourg.
January 2011	Dominik Stein: "Join Point Designation Diagrams: A Visual Design Notation for Join Point Selections in Aspect-Oriented Software Development", Fakultät für Wirtschaftswissenschaften der Universität Duisburg-Essen, Germany.
September 2015	Phu Nguyen: "Model-Driven Security With Modularity and Reusability For Engineering Secure Software Systems", Interdisciplinary Centre for Security and Trust, University of Luxembourg, Luxembourg.

External Examiner Habilitation

December 2015	Benoit Combemale: "Towards Language- Oriented Modeling", Univsersity of Rennes and INRIA Rennes, France.

External Examiner Master Theses

2004	Thomas Feng: "D-Charts, a Formalism for Modeling and Simulation-based Design of Reactive Software Systems", School of Computer Science, McGill University
2004	Spencer Borland: "Transforming Statechart Models to DEVS", School of Computer Science, McGill University
2005	Zeeshan Mohammad Sardar: "Snapshot-based Concurrency Control Protocols for XML", School of Computer Science, McGill University
2005	Christopher Goard: "Measuring and Improving the Runtime Behavior of AspectJ Programs", School of Computer Science, McGill University
2005	Marc Provost: "Himesis: A Hierarchical Subgraph Matching Kernel for Model Driven Development", School of Computer Science, McGill University
2006	Denis Dubé: "Layout in Domain-specific Visual Modelling", School of Computer Science, McGill University
2007	Ximeng Sun: "A Model-Driven Approach to Scenario-Based Requirements Engineering", School of Computer Science, McGill University
2008	Barthélemy Dagenais: "Recommending Adaptive Changes for Framework Evolution", School of Computer Science, McGill University
2010	Ching Ling Tom Chen: "Distributed Collision Detection and Resolution", School of Computer Science, McGill University

2010   Kaiwen Zhang: "Persistent Transaction Models for Massively Multiplayer Online Games", School of Computer Science, McGill University

2011   Xiaoxi Dong: "Ark, the Metamodelling Kernel for Domain Specific Modelling", School of Computer Science, McGill University

2011   Sanket Manjul Joshipura: "Dynamic Load Balancing Strategies for Multi-Tier e-Commerce Applications", School of Computer Science, McGill University

2015   Andrew Bodzay: "AspectMatlab++: Developing an Aspect-Oriented Language for Scientists", School of Computer Science, McGill University

2019   Xoey Zhang: "Modelling Player Understanding of Non-Player Character Paths", School of Computer Science, McGill University

2019   Arya Deeksha: "Exploring the Correspondence Between Types of Documentation of APIs", School of Computer Science, McGill University