Frédéric GERVAIS Ph.D.

frederic.gervais@u-pec.fr
http://fredericgervais.com

Head of the Department of Computer Science, IUT Sénart Fontainebleau
Head of project of a new Departement Multimedia and Internet Jobs, IUT Sénart Fontainebleau
Associate Professor in Computer Science, Member of the LACL research lab

SHORT BIO

Frédéric Gervais is an Associate Professor in computer science at Université Paris-Est Créteil (UPEC) and a member of the LACL research laboratory since 2007. He is currently the Head of the Department of Computer Science, at IUT Sénart Fontainebleau, since November 2018. He is also Head of project of a new Department Multimedia and Internet Jobs, at IUT Sénart Fontainebleau, since January 2019. Previously, he has been President *ad interim* of UPEC from November 2017 to February 2018, Vice President of the Administrative Board of UPEC from January 2017 to February 2018, and Associate Vice President for Finance and Human Resources of UPEC from April 2016 to January 2017. He has already been the Head of the Department of Computer Science from September 2010 to August 2013. Frédéric Gervais earned a Ph.D. in computer science from the Conservatoire National des Arts et Métiers in France and from the Université de Sherbrooke (Québec) in Canada in 2006. His main research interests are in the field of information systems and formal methods. Special interests are coupling and refinement of formal languages for the analysis and design of information systems. Frédéric Gervais has co-supervised five Ph.D. students. He has been involved in three important research projects: EB3sec (NSERC strategic project, 2008-2011), SELKIS (ANR ARPEGE project, 2009-2012), and FORMOSE (ANR SIC project, 2014-2019). Since 2007, Frederic Gervais teaches at the Department of Computer Science, at IUT Sénart Fontainebleau. His main courses are: computer organization and design, user-machine interfaces, UML modelling and formal methods.

ACADEMIC BACKGROUND

1999	**B.Sc. in Mathematics**
2001	**M.Sc. in Mathematics** Master's thesis: *Study of hysteresis: parameter identification in the model of Bouc Wen* Research lab: LAMI, Ecole Nationale des Ponts et Chaussées, Marne-la-Vallée, France
2002	**M.Sc. in Computer Science** Master's thesis: *Reuse of specification patterns in B* Research lab: CEDRIC, Institut d'Informatique d'Entreprise, Evry, France
2006	**Ph.D. in Computer Science** Ph.D. thesis: *Coupling of formal specifications for modelling information systems* Conservatoire National des Arts et Métiers (CNAM), France Université de Sherbrooke (Québec), Canada

ACADEMIC AND RESEARCH EXPERIENCE

Position held	Organization	Period
Teaching Assistant	Ecole Centrale Paris, Châtenay-Malabry, France	from September 2000 to August 2002
Teaching Assistant	Institut d'Informatique d'Entreprise, Evry, France	from September 2002 to August 2005
Research Assistant	CNAM, Paris, France & Université de Sherbrooke (Québec), Canada	from January 2003 to December 2006
Assistant Professor	Université Paris 12, Créteil, France (Faculty of science and technology)	from September 2005 to August 2007
Invited Professor	Université de Sherbrooke (Québec), Canada	since September 2007
Associate Professor	Université Paris-Est Créteil, France : • IUT Sénart Fontainebleau (teaching) • LACL (research)	since September 2007
Head of the Department	Department of Computer Science, IUT Sénart Fontainebleau, France	from September 2010 to August 2013
6-month Research Leave	Université Paris-Est Créteil, France	from February 2014 to July 2014
Associate Vice President for Finance and Human Resources	Université Paris-Est Créteil, France	from April 2016 to January 2017
Vice President of the Administrative Board	Université Paris-Est Créteil, France	from January 2017 to February 2018
President *ad interim*	Université Paris-Est Créteil, France	from November 2017 to February 2018
Head of the Department	Department of Computer Science, IUT Sénart Fontainebleau, France	since November 2018
Head of project	Department Multimedia and Internet Jobs, IUT Sénart Fontainebleau, France	since January 2019

ADMINISTRATIVE ACTIVITIES

University: Université Paris-Est Créteil (UPEC)

Main duties:
- Member of the UPEC Finance Committee (April 2012 – April 2018)
- Member of the Administrative Board of UPEC (February 2016 – April 2018)
- Associate Vice President for Finance and Human Resources (April 2016 – January 2017)
- Vice President of the Administrative Board (January 2017 – February 2018)
- President *ad interim* (November 2017 – February 2018)

TEACHING ACTIVITIES

Department: Department of Computer Science, IUT Sénart Fontainebleau

Main lectures:
- Computer organization and design
- UML modelling
- User-machine interfaces
- Formal methods

Responsabities:
- Responsible for Students Monitoring (2008-2010, 2012-2013, 2014-2016)
- Member of the Department Council (2008-2013, 2015-2018)
- President of *C.I.bleau* Association (since 2008)
- Responsible of the Department *Alumni* network (2014-2016)
- Head of the Department (2010-2013, since 2018)

RESEARCH ACTIVITIES

Research lab: Université Paris-Est, LACL

Funded research projects membership:

- **POLUX:** POLicy Unified eXpression, ANR SETIN project, member only for the last year in 2010. Coordinator: F. Cuppens (TELECOM Bretagne). Participants: TELECOM Bretagne, Supélec Rennes Team SSIR, GRIL (Université de Sherbrooke), LACL (Université Paris-Est).
- **EB3sec:** specification and implementation of secure web systems, NSERC strategic project, 2008-2011. Coordinator: M. Frappier (Université de Sherbrooke). Participants: GRIL (Université de Sherbrooke), LACL (Université Paris-Est), National Bank Financial Group.
- **SELKIS:** a development method of secure health care networks information systems – from requirements engineering to implementation, ANR ARPEGE project, 2009-2012. Coordinator: R. Laleau (Université Paris-Est). Participants: LACL (Université Paris-Est), CEDRIC (CNAM), LIG, IFREMMONT, TELECOM Bretagne, SWID, MED.e.COM, CHU Brest.
- **FORMOSE:** formal requirements modeling for critical complex systems, method and toolkit, ANR SIC project, 2014-2019. Coordinator: R. Laleau (Université Paris-Est). Participants: LACL (Université Paris-Est), Institut Mines-Telecom, ClearSy, Thales.

Students supervision:

- Panawé Batanado, M.Sc. student, co-supervised with M. Frappier (2005)
- Ahmed Gater, M.Sc. Student (2008)
- Hajer Jaziri, M.Sc. student, co-supervised with A. Mammar (2009)
- Abderrahman Matoussi, Ph.D. student, co-supervised with R. Laleau (2007-2011)
- Jérémy Milhau, Ph.D. student, co-supervised with R. Laleau and M. Frappier (2008-2011)
- Michel Embé Jiague, Ph.D. student, co-supervised with R. Laleau and R. St-Denis (2008-2012)
- Dimitris Vekris, Ph.D. student, co-supervised with C. Dima in the first years (2009-2014)
- Thomas Fayolle, Ph.D. student, co-supervised with R. Laleau and M. Frappier (2012-2017)

Reviewing activities and PC membership:

- Reviewer for the following conferences:
  - *International Conference on Formal Engineering Methods (ICFEM)* in 2003, 2004 and 2005
  - *Approches Formelles dans l'Assistance au Développement de Logiciels (AFADL)* in 2004 and 2012
  - *International Conference of B and Z Users* in 2005
  - *Colloque Africain sur la Recherche en Informatique (CARI)* in 2008
  - *International Conference on Advanced Information Systems Engineering (CAiSE)* in 2008, 2009, 2012, 2013, 2014, 2015 and 2016
  - *International Conference ABZ* in 2008, 2012, 2014 and 2016
  - *Congrès INFORSID* in 2009 and 2011
  - *International Conference on Tests and Proofs (TAP)* in 2009
  - *International Symposium on Formal Methods (FM)* in 2011
- Reviewer for the following international journals:
  - *Information and Software Technology*
  - *Theoretical Computer Science*
  - *Formal Aspects of Computing*
  - *Science of Computer Programming*
- Member of the program committee:
  - *B Track of the ABZ 2010 Conference*, in Orford, Québec, Canada, 23-25 February 2010
  - *International Workshop on Modelling and Detection of Vulnerabilities*, in Paris, 10 April 2010
  - *28ème Congrès INFORSID*, in Marseille, France, 25-28 May 2010
  - *10ème Journées Francophones Internationales sur les Approches Formelles dans l'Assistance au Développement de Logiciels (AFADL 2010)*, in Poitiers, France, 9-11 June 2010
  - *4th IEEE International Workshop UML and Formal Methods (UML&FM 2011)*, in Limerick, Ireland, 20 June 2011
  - *11ème Journées Francophones Internationales sur les Approches Formelles dans l'Assistance au Développement de Logiciels (AFADL 2012)*, in Grenoble, France, 11-13 January 2012
  - *5th International Workshop UML and Formal Methods (UML&FM 2012)*, in Paris, France, 27 August 2012
  - *3rd International Workshop on Information Systems Security Engineering (WISSE 2013)*, in Valencia, Spain, 18 June 2013
  - *4th International Workshop on Information Systems Security Engineering (WISSE 2014)*, in Thessaloniki, Greece, 17 June 2014
  - *12th International Symposium on Programming and Systems (ISPS 2015)*, in Algiers, Algeria, 28-30 April 2015
  - *10th International Conference on Evaluation of Novel Approaches to Software Engineering (ENASE 2015)*, in Barcelona, Spain, 29-30 April 2015
  - *11th International Conference on Evaluation of Novel Approaches to Software Engineering (ENASE 2016)*, in Rome, Italy, 27-28 April 2016
  - *12th International Conference on Evaluation of Novel Approaches to Software Engineering (ENASE 2017)*, in Porto, Portugal 28-29 April 2017
  - *13th International Conference on Evaluation of Novel Approaches to Software Engineering (ENASE 2018)*, in Funchal, Portugal, 23-24 March 2018
  - *14th International Conference on Evaluation of Novel Approaches to Software Engineering (ENASE 2019)*, in Heraklion, Greece, 4-5 May 2019

Conference organization:

- Session chair:
  - *8th International Conference on Enterprise Information Systems (ICEIS 2006)*, in Paphos, Cyprus, 24-27 May 2006
  - *5th International Workshop UML and Formal Methods (UML&FM 2012)*, in Paris, France, 27 August 2012
- Member of the organization committee:
  - *26ème Congrès INFORSID*, in Fontainebleau, France, 27-30 May 2008
  - *ABZ 2010 International Conference*, in Orford, Québec, Canada, 22-25 February 2010
  - *12th International Conference on Membrane Computing (CMC12)*, in Fontainebleau, France, 23-26 August 2011
  - *21st EACSL Annual Conference on Computer Science Logic (CSL 2012)*, in Fontainebleau, France, 3-6 September 2012
- Organizer of the *Workshop on Tool Building in Formal Methods (WS-TBFM 2010)*, in Orford, Québec, Canada, 22 February 2010

Scientific management:

- Member of 7 selection committees for associate professor positions
- Former member of ANDèS (a French Community of Ph.D.s) from 2006 to 2012
- Former member of SPECIEF (Requirements Engineering) from 2014 to 2016
- Former member of the Board of *Société Informatique de France* from 2011 to 2017
- Former member of the LACL Research lab Council from 2014 to 2016
- ASM-B Working Group leader at the LACL Research lab from 2014 to 2017

International collaborations:

- Invited professor, Université de Sherbrooke (Québec), Canada, since September 2007
- Visitor, DNIPRO project, Faculty of Cybernetics, Kiev University, Ukraine, 15-21 November 2008

Distinction:

- Honour List 2007, Faculty of Sciences, Université de Sherbrooke (Québec), Canada

RESEARCH INTERESTS

Main topics:
- Formal specification languages (in particular, B and EB^3)
- Refinement
- Specification and verification of dynamic properties of information systems
- Reuse of specification patterns
- Security of information systems
- Formal requirements modeling for complex systems

PUBLICATIONS

Refeered journals (5)

[FG1]   F. Gervais: EB[4], vers une méthode de spécification formelle des SI. *Ingénierie des Systèmes d'Information*, Vol. 12, n°4, special issue « Conception des systèmes d'information : patrons et spécifications formelles », pp. 69-93, Hermès, 2007.

[FG2]   M. Frappier, F. Gervais, R. Laleau, B. Fraikin, R. St-Denis: Extending Statecharts with process algebra operators. *Innovations in Systems and Software Engineering*, Vol. 4, n°3, pp. 285-292, Springer-Verlag, 2008.

[FG3]   F. Gervais, M. Frappier, R. Laleau: Generating Relational Database Transactions from EB[3] Attribute Definitions. *Software and Systems Modeling*, Vol. 8, n°3, pp. 423-445, Springer-Verlag, 2009.

[FG4]   M. Embe Jiague, M. Frappier, F. Gervais, R. Laleau, R. St-Denis: Enforcing ASTD Access-control Policies with WS-BPEL Processes in SOA Environments. *International Journal of Systems and Service-Oriented Engineering*, Vol. 2, n° 2, pp. 37-59, IGI Publishing, 2011.

[FG5]   M. Frappier, F. Gervais, R. Laleau, J. Milhau: Refinement patterns for ASTDs. *Formal Aspects of Computing*, Vol. 26, n°5, pp. 919-941, Springer-Verlag, 2014.

Refeered conferences (25)

[FG6]   S. Blazy, F. Gervais, R. Laleau: Une démarche outillée pour spécifier formellement des patrons de conception réutilisables. In *Workshop Objets, Composants et Modèles dans l'Ingénierie des SI (OCM-SI 2003)*, Nancy, France, 3 June. INFORSID, pp. 5-9, 2003.

[FG7]   S. Blazy, F. Gervais, R. Laleau: Reuse of specification patterns with the B method. In *ZB2003: Formal Specification and Development in Z and B, 3rd International Conference of B and Z Users*, Turku, Finland, 4-6 June. Springer-Verlag, LNCS 2651, pp. 40-57, 2003.

[FG8]   F. Gervais, M. Frappier, R. Laleau: How to synthesize relational database transactions from EB[3] attribute definitions? In *3rd International Workshop on Modelling, Simulation, Verification and Validation of Enterprise Information Systems (MSVVEIS 2005)*, Miami, Florida, USA, 24-25 May. INSTICC Press, pp. 83-88, 2005.

[FG9]   F. Gervais, M. Frappier, R. Laleau: Generating relational database transactions from recursive functions defined on EB[3] traces. In *3rd IEEE International Conference on Software Engineering and Formal Methods (SEFM 2005)*, Koblenz, Germany, 7-9 September. IEEE Computer Society Press, pp. 117-126, 2005.

[FG10]   F. Gervais, M. Frappier, R. Laleau: Synthesizing B specifications from EB[3] attribute definitions. In *5th International Conference on Integrated Formal Methods (IFM 2005)*, Eindhoven, The Netherlands, 29 November to 2 December. Springer-Verlag, LNCS 3771, pp. 207-226, 2005.

[FG11]   F. Gervais, P. Batanado, M. Frappier, R. Laleau: Génération automatique de transactions de base de données relationnelle à partir de définitions d'attributs EB[3]. In *Atelier Approches Formelles dans l'Assistance au Développement de Logiciels (AFADL 2006)*, Paris, France, 15-17 March. ENST, pp. 25-39, 2006.

[FG12] F. Gervais, P. Batanado, M. Frappier, R. Laleau: EB^{3}TG: A tool synthesizing relational database transactions from EB^3 attribute definitions. In *8th International Conference on Enterprise Information Systems (ICEIS 2006)*, Paphos, Cyprus, 24-27 May. INSTICC Press, Volume *Information Systems Analysis and Specification*, pp. 44-51, 2006.

[FG13] F. Gervais: EB^4 : Vers une méthode de spécification formelle des SI. In *24ème Congrès INFORSID*, Hammamet, Tunisie, 1-3 June. INFORSID, Volume II, pp. 561-576, 2006.

[FG14] A. Mammar, F. Gervais, R. Laleau: Systematic identification of preconditions from set-based integrity constraints. In *24ème Congrès INFORSID*, Hammamet, Tunisie, 1-3 June. INFORSID, Volume II, pp. 595-610, 2006.

[FG15] F. Gervais, M. Frappier, R. Laleau: Refinement of EB^3 process patterns into B specifications. In *7th International B Conference (B 2007)*, Besançon, France, 17-19 January. Springer-Verlag, LNCS 4355, pp. 201-215, 2007.

[FG16] M. Frappier, B. Fraikin, F. Gervais, R. Laleau, M. Richard: Synthesizing information systems: the APIS project. In *1st International Conference on Research Challenges in Information Science (RCIS 2007)*, Ouarzazate, Morocco, 23-26 April. C. Rolland, O. Pastor, J.-L. Cavarero (editors), pp. 73-84, 2007.

[FG17] A. Matoussi, F. Gervais, R. Laleau: A First Attempt to Express KAOS Refinement Patterns with Event B. In *International Conference ABZ 2008*, London, United Kingdom, 16-18 September 2008 (short paper).

[FG18] A. Matoussi, F. Gervais, R. Laleau: De KAOS vers Event-B: approche dirigée par les buts. In *Approches Formelles dans l'Assistance au Développement de Logiciels (AFADL 2009)*, Toulouse, France, 26-28 January. Actes AFADL, pp. 71–86, 2009.

[FG19] D. Michel, F. Gervais, P. Valarcher: B-ASM: Specification of ASM à la B. In *International Conference ABZ 2010*, Orford, Québec, Canada, 23-25 February 2010 (short paper).

[FG20] K. Salabert, J. Milhau, B. Fraikin, M. Frappier, F. Gervais, and R. Laleau: iASTD : un interpréteur pour les ASTD. In *Approches Formelles dans l'Assistance au Développement de Logiciels (AFADL 2010)*, Poitiers, France, 9-11 June. Actes AFADL, pp. 3-6, 2010.

[FG21] M. Embe Jiague, M. Frappier, F. Gervais, P. Konopacki, R. Laleau, J. Milhau, R. St-Denis: Model-driven engineering of functional security policies. In *12th International Conference on Enterprise Information Systems (ICEIS 2010)*, Funchal, Madeira, Portugal, 8-12 June. INSTICC Press, Volume *Information Systems Analysis and Specification*, pp. 374–379, 2010.

[FG22] J. Milhau, M. Frappier, F. Gervais, R. Laleau: Systematic translation rules from ASTD to Event-B. In *8th International Conference on Integrated Formal Methods (IFM 2010)*, Nancy, France, 12-14 October. Springer-Verlag, LNCS 6396, pp. 245-259, 2010.

[FG23] A. Matoussi, F. Gervais, R. Laleau: Specification of a localization component driven by a goal-based approach: some lessons we learned. In *13th Brazilian Symposium on Formal Methods (SBMF 2010)*, Natal, Rio Grande do Norte, Brazil, 8-12 November 2010. Springer-Verlag, LNCS 6527, pp. 177-193, 2011.

[FG24] M. Embe Jiague, M. Frappier, F. Gervais, R. Laleau, R. St-Denis: From ASTD access control policies to WS-BPEL processes deployed in a SOA environment. In *1st International Symposium on Web Intelligent Systems & Services (WISS 2010)*, Hong Kong, China, 12-14 December 2010. Springer-Verlag, LNCS 6724, pp. 126-141, 2011.

[FG25] A. Matoussi, F. Gervais, R. Laleau: A goal-based approach to guide the design of an abstract Event-B specification. In *16th IEEE International Conference on Engineering of Complex Computer Systems (ICECCS 2011)*, Las Vegas, Nevada, USA, 27-29 April. IEEE Computer Society Press, pp. 139-148, 2011.

[FG26] M. Embe Jiague, M. Frappier, F. Gervais, R. Laleau, R. St-Denis: A metamodel for the design of access-control policy enforcement managers: work in progress. In *4th MITACS Workshop on Foundations & Practice of Security (FPS 2011)*, Paris, France, 12-13 May. Springer-Verlag, LNCS 6888, pp. 218-226, 2011.

[FG27] M. Embe Jiague, M. Frappier, F. Gervais, P. Konopacki, R. Laleau, J. Milhau, R. St-Denis: A four-concern-oriented secure IS development approach. In *8th International Joint Conference on e-Business and Telecommunications (ICETE 2011)*, Seville, Spain, 18-21 July. INSTICC Press, Volume *SECRYPT 2011*, pp. 464-471, 2011.

[FG28] J. Milhau, F. Gervais, R. Laleau, M. Frappier: Refinement patterns for ASTD. In *5th International Workshop UML and Formal Methods (UML&FM 2012)*, Paris, France, 27 August. ACM SIGSOFT Software Engineering Notes, Volume 37, Issue 4, pp. 1-8, 2012.

[FG29] T. Fayolle, M. Frappier, R. Laleau, F. Gervais: Formal refinement of extended state machines. In *17th Refinement Workshop (REFINE 2015)*, Oslo, Norway, 22 June 2015, EPTCS 209, pp. 1-16, 2016.

[FG30] T. Fayolle, M. Frappier, F. Gervais, R. Laleau: Modelling a hemodialysis machine using algebraic state-transition diagrams and B-like methods. In *5th International ABZ Conference (ABZ 2016)*, Linz, Austria, 23-27 May, Springer-Verlag, LNCS 9675, pp. 394-408, 2016.

Guest editor (1)

[FG31] F. Gervais, B. Fraikin (Eds): Tool Building in Formal Methods – Extended Papers from WS-TBFM 2010. *Software: Practice and Experience*, Vol. 41, n°2, John Wiley & Sons, pp. 131-208, 2011.

Book chapter (1)

[FG32] F. Gervais, M. Frappier, R. St-Denis: EB^3. In *Software Specification Methods*. Hermès Science Publishing, ISTE, ISBN : 1-905209-34-7, chapter 14, pp. 259-274, 2006.

M.Sc. and Ph.D. theses (2)

[FG33] F. Gervais: *Réutilisation de composants de spécification en B*. M.Sc. Thesis, DEA Informatique, July 2002 (119 pages).

[FG34] F. Gervais: *Combinaison de spécifications formelles pour la modélisation des systèmes d'information*. Ph.D. Thesis, December 2006 (248 pages).

Updated on March 11, 2019