Jean-Paul Comet – Curriculum Vitae

Full Professor in Computer Science at Université Côte d'Azur

Lab : Informatique, Signaux et Systèmes de Sophia-Antipolis (I3S) – UMR CNRS 7271

Civil status : French, 55 year old, married, 3 children.

Academic appointments:

– From Sept. 2007: Full Professor (Exceptional class from Sept 2023, 1st class 2014-2023, recipient of the research and doctoral supervision grants (PEDR) 2006-2018 and since 2019 (RIPEC-3)) in computer science at Université Côte d'Azur.

– November 2006 : Habilitation, University of Evry-Val d'Essonne (France). Title : *From textual bio-informatics to a formal approach of systems biology.*

– 2000–07 : Assistant professor (PEDR 2006), on a sabbatical leave (délégation) 2004–2006.

– 1999 : Post-doc in bioinformatics at Whitehead Institute/MIT Center for Genome Research, USA.

– 1995–1998 : PhD in Computer Science at the Technological University of Compiègne (France). Laboratory: INRIA Rocquencourt. Title: Dynamic Programming and biological sequence alignments.

Research topics: Extensions and applications of formal methods for modeling of biological regulatory networks, model-checking, Hoare logic, testing methods, constraints approaches, graph transformations, hybrid models, Machine Learning for toxicity prediction.

Supervision of PhD students:

students	dates	supervisors
A. Richard	2003–2006	G. Bernot (10%) and my-self (90%)
M. Poudret	2005–2009	P. Le Gall (20%), A. Arnould (50%) and my-self (30%)
S. Troncale	2005–2008	G. Bernot (50%) and my-self (50%)
J. Fromentin	2006–2009	O. Roux (60%), P. Le Gall (20%) and my-self (20%)
Z. Khalis	2006–2010	G. Bernot (50%) and my-self (50%)
A. Das	2009–2012	F. Diener (50%), G. Bernot (25%) and my-self (25%)
E. Cornillon	2013–2016	G. Bernot (50%) and my-self (50%)
B. Miraglio	2014–2017	G. Bernot (40%), C. Risso (20%) and my-self (40%)
J. Behaegel	2015–2018	F. Delaunay (45%), M. Pelleau (10%) and my-self (45%)
I. Grenet	2016–2019	100%, convention CIFRE, Bayer Crop Science
D. Boyenval	2018–2022	G. Bernot (40%), F. Delaunay (30%), and my-self (30%)
L. Gibart	2019–2022	G. Bernot (50%) and my-self (50%)
R. Michelucci	2021–2024	D. Pallez (50%) and my-self (50%)
F. Camilleri	2021–2024	convention CIFRE, Bayer Crop Science

Evaluation Committees:

– member of the evaluation committee « SIMI 2 » of ANR, national agency for research, 2011–2013.

– member of the committee for the "research and doctoral supervision grants (PEDR)" of the section 27 CNU (National council of universities), in 2009, 2012 and 2013.

– elected member of CNU (National council of universities) section 27, Oct 2015–Oct 2023.

– member of two lab evaluation committees of HCERES, 2013 and 2018.

Departmental and University Responsibilities:

– Responsible for the bioinfomatics graduate education of the department of biology of the engineer school EPU at University of Nice-Sophia (two semesters). I teach programming languages, bioinformatics, algorithmics, databases, maths for biology, modeling of biological systems...

– Member of the scientific committee of academia *complexity et diversity of living cells*, Université Côte-d'Azur (until Sept. 2023).

– In charge of the research group « Formal Bioinformatics » (8 permanents), 2012-2018.

– Deputy director of the research team SPARKS (45 permanent members), since jan 2020.

– Director of the doctoral school in Information Technologies (∼250 PhD students) since january 2023.

Participation in the animation of the research:

- Organization of a thematic school on the « modeling of biological networks », '13, '16, '19, and 2023.
- Member of the scientific committee of this school in june 2010.
- Organization of a workshop on the « Theory of Boolean networks », November 2014.
- Organization with S. Vial and F. Quessette of 3 thematic days on Interaction networks: analysis, modeling and simulation, satellite meetings of conferences IPG'05, IPG'06 et IPG'07.
- In charge, with G. Bernot of the spring school « Modelling and simulation of biological processes in the context of post-genomics », La Colle sur Loup, France, March 29th – April 3rd 2009.
- Local committee of spring school Modeling and simulation of complex biological processes in the context of genomics, 2004, 2007, (Evry, France) and 2009 (Nice, France); local committee of the international symposium on macromolecular networks, and of workshop on regulatory proteins interplay and traffic on DNA, Paris and Evry, 2002.
- Referee for numerous journals and conferences, Program Committee of numerous conferences.
- Book edition, « modelling and simulation of biological processes in the context of genomics », 2004,
- Editor with M. Kaufman of a special issue of TSI on modeling and simulation for post-genomics, 2007

Publications :

- 18 book chapters, 29 papers in international journals,
- 1 article in a national journal in 2004 *and* 1 article in a journal popularizing science in 2007,
- 27 papers in international conferences.

The majority of my publications (journals, conferences, chapters ...) are available on my webpage: `http://www.i3s.unice.fr/~comet/`.

Editions

[e1] P. Amar, J.-P. Comet, F. Képès, and V. Norris, editors. *Modelling and simulation of biological processes in the context of genomics.* Publisher Frontier group (ISBN : 2-84704-0374), June 2004.

[e2] J.-P. Comet and M. Kaufman, editors. *Modélisation et simulation pour la post-génomique.* TSI, numéro spécial, Mars 2007.

Book chapters

[c1] J.-J. Codani, J.-P. Comet, J.-C. Aude, E. Glémet, A. Wozniak, J.-L. Risler, A. Hénaut, and P.P. Slonimski. *Automation, Genomic and Functional Analyses*, volume 28, chapter Automatic analysis of large scale pairwise alignments of protein sequences, pages 229–244. Academic Press, ISBN : 0-12-521527-4, 1999.

[c2] J. Mary, G. Mercier, J.-P. Comet, A. Cornuéjols, C. Froidevaux, and M. Dutreix. *Proc. of the Dieppe Spring school on Modelling and simulation of biological processes in the context of genomics*, chapter Using an attribute estimation technique for the analysis of microarray data, pages 69–77. Publisher Frontier group, ISBN : 2-84704-036, 2003.

[c3] G. Bernot, J. Guespin-Michel, J.-P. Comet, P. Amar, A. Zemirline, F. Delaplace, P. Ballet, and A. Richard. *Proc. of the Dieppe Spring school on Modelling and simulation of biological processes in the context of genomics*, chapter Modelling, observability and experiment: a case study, pages 49–55. Publisher Frontier group, ISBN : 2-84704-036, 2003.

[c4] J. Mary, G. Mercier, J.-P. Comet, A. Cornuéjols, C. Froideveaux, and M. Dutreix. *Informatique pour l'analyse du transcriptome*, chapter Utilisation d'une méthode de sélection d'attributs pour l'analyse du transcriptome de cellules de levure exposées à de faibles doses de radiation, pages 189–205. Hermes, ISBN : 2-7462-0850-4, 2004.

[c5] A. Richard, J.-P. Comet, and G. Bernot. *Modern Formal Methods and Applications*, chapter Formal Methods for Modeling Biological Regulatory Networks, pages 83–122. Springer, ISBN: 1-4020-4222-1, 2006.

[c6] D. Mateus, J.-P. Comet, J.-P. Gallois, and P. Le Gall. *Proc. of the Evry Spring school on Modelling complex biological systems in the context of genomics*, chapter Inferring parameters of genetic regulatory networks with symbolic formal methods, pages 51–70. EDP Science, ISBN : 978-2-7598-0019-3, 2007.

[c7] M. Poudret, J.-P. Comet, P. Le Gall, F. Képès, A. Arnould, P. Meseure, J.-M. Verbavatz, and A. Rambourg. *Proc. of the Lille Spring school on Modelling complex biological systems in the context of genomics*, chapter Toward a computer-aided methodology for topology-based simulation of the Golgi apparatus, pages 89–104. EDP Science, ISBN : 978-2-7598-0075-9, 2008.

[c8] Z. Khalis, G. Bernot, and J.-P. Comet. *Proc. of the Nice Spring school on Modelling complex biological systems in the context of genomics*, chapter Gene Regulatory Networks: Introduction of multiplexes into R. Thomas' modelling, pages 139–151. EDP Science, ISBN : 978-2-7598-0437-5, 2009.

[c9] J.-P. Comet and G. Bernot. *Proc. of the Evry Spring school on Modelling complex biological systems in the context of genomics*, chapter Introducing continuous time in discrete models of gene regulatory networks, pages 61–94. EDP Sciences, ISBN : 978-2-7598-0545-7, 2010.

[c10] J.-P. Comet, G. Bernot, A. Das, F. Diener, Massot C., and A. Cessieux. *Proc. of the Evry Spring school on Modelling complex biological systems in the context of genomics*, chapter Simplified models for the mammalian circadian clock, pages 85–106. EDP Sciences, 2012.

[c11] G. Bernot, J.-P. Comet, A. Richard, M. Chaves, J.-L. Gouzé, and F. Dayan. *Modeling in Computational Biology and Biomedicine, A Multidisciplinary Endeavor*, chapter Modeling and analysis of gene regulatory networks, pages 47–80. Springer, ISBN : 978-3-642-31208-3, 2013.

[c12] G. Bernot, J.-P. Comet, and C. Risso-de Faverney. *Computational Toxicology*, volume II, chapter Regulatory networks, pages 215–234. Humana Press, ISBN 978-1-62703-058-8, USA, 2013.

[c13] El Houssine Snoussi Gilles Bernot, Jean-Paul Comet. *Logical Modeling of Biological Systems*, chapter Formal methods applied to gene network modelling, pages 77–90. 2014.

[c14] K.J.E. Carpio, G. Bernot, J.-P. Comet, and F. Diener. *Proc. of the Thematic Research School on Advances in Systems and Synthetic Biology, Modelling Complex Biological Systems in the Context of Genomics*, chapter Probabilistic Gene Network, pages 77–90. EDP Sciences, ISBN 978-2-7598-1764-1, 2015.

[c15] B. Miraglio, B. Bernot, J.-P. Comet, and C. Risso-de Faverney. *Proc. of the Thematic Research School on Advances in Systems and Synthetic Biology, Modelling Complex Biological Systems in the Context of Genomics*, chapter Towards a Computer Aided Toxicology, pages 85–101. EDP Sciences, ISBN : ISBN : 978-2-7598-1971-3, 2016.

[c16] E. Cornillon, J.-P. Comet, G. Bernot, and G. Enée. *Proc. of the Thematic Research School on Advances in Systems and Synthetic Biology, Modelling Complex Biological Systems in the Context of Genomics*, chapter Hybrid Gene Networks: a new Framework and a Software Environment, pages 57–84. EDP Sciences, ISBN : 978-2-7598-1971-3, 2016.

[c17] H. Collavizza, G. Bernot, and J.-P. Comet. *Approches symboliques de la modélisation et de l'analyse des systèmes biologiques*, chapter Méthodes de vérification formelle pour la modélisation en biologie : le cas des réseaux de régulation biologique, pages 275–335. ISTE, ISBN: 9781789480290, DOI: 10.51926/ISTE.9029.ch8, 2022.

[c18] H. Collavizza, G. Bernot, and J.-P. Comet. *Symbolic Approaches to Modeling and Analysis of Biological Systems*, chapter Formal Verification Methods for Modeling in Biology: Biological Regulation Networks, pages 255–312. ISTE, ISBN: 978-1-78945-029-3, DOI: 10.1002/9781394229086.ch8, 2023.

> The volumes in which the references [c2, c3, c6] [c7, c8, c9, c10, c14, c15, c16] appear, combine both proceedings of the thematic schools and book chapters. The references above correspond to chapters.

International journals

[ij1] J.-P. Comet, J.-C. Aude, E. Glémet, A. Hénaut, J.-L. Risler, P.P. Slonimski, and J.-J. Codani. Significance of Z-value statistic of Smith-Waterman scores for protein alignments. *Computers and Chemistry*, 23(3-4):317–331, 1999.

[ij2] J.-N. Bacro and J.-P. Comet. Sequence alignment : an approximation law for the Z-value with applications to databank scanning. *Computers and Chemistry*, 25:401–410, 2001.

[ij3] J.-P. Comet and J. Henry. Pairwise sequence alignment using a PROSITE pattern-derived similarity score. *Computers and Chemistry*, 26(5):421–436, 2002.

[ij4] J.-P. Comet. Application of max-plus algebra to biological sequence comparisons. *Theoretical Computer Science*, 293:189–217, 2003.

[ij5] G. Mercier, N. Berthault, J. Mary, J. Peyre, A. Antoniadis, J.-P. Comet, A. Cornuéjols, C. Froidevaux, and M. Dutreix. Biological detection of low radiation by combining results of two microarray analysis methods. *Nucleic Acids Research*, 32(1):e12, 2004.

[ij6] G. Bernot, J.-P. Comet, A. Richard, and J. Guespin. Application of formal methods to biological regulatory networks: Extending Thomas' asynchronous logical approach with temporal logic. *Journal of Theoretical Biology*, 229(3):339–347, 2004.

[ij7] J. Guespin-Michel, G. Bernot, J.-P. Comet, A. Mérieau, A. Richard, C. Hulen, and B. Polack. Epigenesis and dynamic similarity in two regulatory networks in pseudomonas aeruginosa. *Acta Biotheoretica*, 52(4):379–390, 2004.

[ij8] A. Richard, J.-P. Comet, and G. Bernot. R. Thomas' modeling of biological regulatory networks : introduction of singular states in the qualitative dynamics. *Fundamenta Informaticae*, 65(4):373–392, 2005.

[ij9] D. Filopon, A. Merieau, G. Bernot, J.-P. Comet, R. Leberre, B. Guery, B. Polack, and J. Guespin-Michel. Epigenetic acquisition of inducibility of type III cytotoxicity in p. aeruginosa. *BMC Bioinformatics*, 7:272, 2006.

[ij10] D. Mateus, J.-P. Gallois, J.-P. Comet, and P. Le Gall. Symbolic modeling of genetic regulatory networks. *Journal of Bioinformatics and Computational Biology*, 5(2B):627–640, 2007.

[ij11] A. Richard and J.-P. Comet. Necessary conditions for multistationarity in discrete dynamical systems. *Discrete Applied Mathematics*, 155(18):2403–2413, 2007.

[ij12] S. Troncale, R. Thuret, C. Ben, N. Pollet, J.-P. Comet, and G. Bernot. Modelling of the TH-dependent regulation of tadpole tail resorption. *Journal of Biological Physics and Chemistry*, 7(2):45–50, 2007.

[ij13] J. Ahmad, G. Bernot, J.-P. Comet, D. Lime, and O. Roux. Hybrid modelling and dynamical analysis of gene regulatory networks with delays. *ComPlexUs*, 3(4):231–251, 2006 (Cover Date: November 2007).

[ij14] J. Ahmad, O. Roux, G. Bernot, J.-P. Comet, and A. Richard. Analysing formal models of genetic regulatory networks with delays: Applications to lambda phage and T-cell activation systems. *Int. J. Bioinformatics Research and Applications*, 4(3):240–262, 2008.

[ij15] M. Poudret, J.-P. Comet, P. Le Gall, F. Képès, A. Arnould, and P. Meseure. Topology-based abstraction of complex biological systems: Application to the Golgi apparatus. *Theory in Biosciences*, 127:79–88, 2008.

[ij16] S. Troncale, J.-P. Comet, and G. Bernot. Enzymatic competition: Modeling and verification with timed hybrid Petri nets. *Pattern Recognition*, 42(4):562–566, 2009.

[ij17] Z. Khalis, J.-P. Comet, A. Richard, and G. Bernot. The SMBioNet method for discovering models of gene regulatory networks. *Genes, Genomes and Genomics*, 3(special issue 1):15–22, 2009.

[ij18] A. Richard and J.-P. Comet. Stable periodicity and negative circuits in differential systems. *Journal of Mathematical Biology*, 63(3):593–600, 2011 [online, december 1st, 2010].

[ij19] M. Mabrouki, M. Aiguier, J.-P. Comet, P. Le Gall, and A. Richard. Embedding of biological regulatory networks and properties preservation. *Mathematics in Computer Science*, 5(3):263–288, 2011.

[ij20] S. Taati, E. Formenti, J.-P. Comet, and G. Bernot. On the impact of the distance between two genes on their interaction curve. *Journal of Mathematical Biology*, 64(1):131–147, 2012.

[ij21] A. Richard, G. Rossignol, J.-P. Comet, G. Bernot, J. Guespin-Michel, and A. Merieau. Boolean models of biosurfactants production in pseudomonas fluorescens. *PlosOne*, 7(1):e24651, 2012.

[ij22] J.-P. Comet, M. Noual, A. Richard, J. Aracena, L. Calzone, J. Demongeot, M. Kaufman, A. Naldi, E.H. Snoussi, and D. Thieffry. On circuit functionality in boolean networks. *Bulletin of Mathematical Biology*, 75(6):906–919, 2013.

[ij23] J. Behaegel, J.-P. Comet, G. Bernot, E. Cornillon, and F. Delaunay. A hybrid model of cell cycle in mammals. *J. Bioinformatics and Comput. Biol.*, 14(1):1640001 [17 pp.], 2016.

[ij24] I. Grenet, Y. Yin, and J.-P. Comet. G-networks to predict the outcome of sensing of toxicity. *Sensors*, 18:3483, 2018.

[ij25] G. Bernot, J.-P. Comet, Z. Khalis, A. Richard, and O. F. Roux. A genetically modified Hoare logic. *Theoretical Computer Science*, 765:145–157, 2019. https://doi.org/10.1016/j.tcs.2018.02.003.

[ij26] I. Grenet, K. Merlo, J.-P. Comet, R. Tertiaux, D. Rouquié, and F. Dayan. Stacked generalization with applicability domain outperforms simple qsar on in vitro toxicological data. *J. Chemical Information and Modeling*, 59(4):1486–1496, 2019.

[ij27] I. Grenet, J.-P. Comet, F. Schorsch, N. Ryan, J. Wichard, and D. Rouquié. Chemical in vitro bioactivity profiles are not informative about the long-term in vivo endocrine mediated toxicity. *Computational Toxicology*, 12:100098, nov. 2019.

[ij28] L. Gibart, R. Khoodeeram, G. Bernot, J.-P. Comet, and J.-Y. Trosset. Regulation of eukaryote metabolism: An abstract model explaining the warburg/crabtree effect. *Processes*, 9:1496, 2021.

[ij29] L. Gibart, H. Collavizza, and J.-P. Comet. A phenotypic matrix for greening qualitative regulatory networks with environments. *BMC bioinformatics*, 2024, To appear.

National journals

[nj1] J. Guespin, J.-P. Comet, and G. Bernot. Les réseaux de régulation biologique : rencontre entre biologie et informatique. *T.S.I.*, 23(7):939–945, 2004.

[nj2] G. Bernot, J.-P. Comet, and J. Guespin. Elucider le fonctionnement d'un réseau de régulation biologique par l'informatique. *Biofutur (Mensuel de vulgarisation), numéro spécial sur la biologie intégrative*, 275:22–25, 2007.

International Conferences and workshops with proceedings

[ic1] S. Pérès and J.-P. Comet. Contribution of computational tree logic to biological regulatory networks: example from pseudomonas aeruginosa. In *International workshop on Computational Methods in Systems Biology*, volume 2602 of *LNCS*, pages 47–56, February 24-26, 2003, taux d'acceptation : 28%.

[ic2] G. Bernot, F. Cassez, J.-P. Comet, F. Delaplace, C. Müller, O. Roux, and O.H. Roux. Semantics of biological regulatory networks. In *Proceedings of the Workshop on Concurrent Models in Molecular Biology (BioConcur'2003)*, 2003.

[ic3] A. Richard, J.-P. Comet, and G. Bernot. Graph-based modeling of biological regulatory networks : Introduction of singular states. In *Proceedings of the second International workshop on Computational Methods in Systems Biology (CMSB)*, volume 3082 of *LNBI*, pages 58–72, 2004.

[ic4] J.-P. Comet, H. Klaudel, and S. Liauzu. Modeling multi-valued genetic regulatory networks using high-level Petri nets. In *In ICATPN 2005*, volume 3536 of *LNCS*, pages 208–227, 2005.

[ic5] J. Ahmad, A. Richard, G. Bernot, J.-P. Comet, and O. Roux. Delays in biological regulatory networks. In *Proceedings of IWBRA06*, volume 3992 of *LNCS*, pages 887–894, 2006, taux d'acceptation : 37%.

[ic6] M. Poudret, J.-P. Comet, P. Le Gall, A. Arnould, and Ph. Meseure. Topology-based geometric modelling for biological cellular processes. In *first International Conference on Language and Automata Theory and Applications, LATA'07*, See the proceedings on the website of the conference, pages 497–508, 2007, taux d'acceptation : 28%.

[ic7] J. Fromentin, J.-P. Comet, P. Le Gall, and O. Roux. Analysing gene regulatory networks by both constraint programming and model-checking. In *EMBC'07, 29th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, pages 4595–4598, Lyon, France, 2007, August 23-26.

[ic8] S. Troncale, J.-P. Comet, and G. Bernot. Validation of biological models with temporal logic and timed hybrid Petri nets. In *EMBC'07, 29th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, pages 4603–4608, Lyon, France, 2007, August 23-26.

[ic9] S. Troncale, J.-P. Comet, and G. Bernot. Verification of biological models with timed hybrid Petri nets. In Xiaobo Pham, Tuan D.; Zhou, editor, *Proc. of the 2007 Intl Symp. on Computational Models for Life Sciences (CMLS07), American Institute of Physics Conference Proc. Series (AIP), ISBN 978-0-7354-0466-3*, volume 952, pages 287–296, Gold Coast, Queensland, Australia, 2007, December 17-19.

[ic10] M. Mabrouki, M. Aiguier, J.-P. Comet, and P. Le Gall. Property preservation along embedding of biological regulatory networks. In *Algebraic Biology*, volume 5147 of *LNCS*, pages 125–138, Austria, July 31st-August 2d 2008.

[ic11] M. Poudret, A. Arnould, J.-P. Comet, and P. Le Gall. Graph transformation for topology modelling. In H. Ehrig et al., editor, *Proceedings of the ICGT 2008*, volume 5214 of *LNCS*, pages 147–161, Leicester, United Kingdom, September 7 - 13 2008. Springer-Verlag Berlin Heidelberg.

[ic12] G. Bernot, J.-P. Comet, and Z. Khalis. Gene regulatory networks with multiplexes. In *European Simulation and Modelling Conference Proceedings*, ISBN: 978-90-77381-44-1, pages 423–432, France, October 27st-29th 2008.

[ic13] G. Bernot, J.-P. Comet, E. Formenti, and S. Taati. Gene regulatory networks: the impact of distance between genes. In *19th International Symposium in Mathematical Theory of Networks and Systems (MTNS'10)*, Budapest (Hungary),, July 5-9 2010.

[ic14] J.-P. Comet, J. Fromentin, G. Bernot, and O. Roux. A formal model for gene regulatory networks with time delays. In J.H. Chan, Ong Y.-S., and Cho S.-B., editors, *1st International Conference on Computational Systems-Biology and Bioinformatics (CSBio'2010)*, volume 115 of *Communications in Computer and Information Science (CCIS)*, pages 1–13, Bangkok (Thailand), November 3-5 2010. Springer.

[ic15] J.-P. Comet, G. Bernot, A. Das, F. Diener, C. Massot, and A. Cessieux. Simplified models for the mammalian circadian clock. In *3rd International Conference on Computational Systems-Biology and Bioinformatics (CSBio'2012)*, volume 11 of *Procedia Computer Science*, pages 127–138, Bangkok (Thailand), October 3-5 2012.

[ic16] J. Behaegel, J.-P. Comet, G. Bernot, E. Cornillon, and F. Delaunay. A hybrid model of cell cycle in mammals. In *6th International Conference on Computational Systems-Biology and Bioinformatics (CSBio'2015)*, Bangkok (Thailand), November 22-25 2015.

[ic17] B. Miraglio, G. Bernot, J.-P. Comet, and C. Risso-De Faverney. A qualitative framework dedicated to toxicology. In *Proceedings of the 8th International Conference on Bioinformatics Models, Methods and Algorithms*, 2017.

[ic18] B. Miraglio, G. Bernot, J.-P. Comet, and C. Risso-De Faverney. Detecting toxicity pathways with a formal framework based on equilibrium changes. In *Proceedings of the 15th conference on Computational Methods for Systems Biology (CMSB)*, 2017.

[ic19] J. Behaegel, J.-P. Comet, and F. Folschette. Constraint identification using modified Hoare logic on hybrid models of gene networks. In *Proceedings of the 24th International Symposium on Temporal Representation and Reasoning (TIME)*, pages 5:1–5:21, 2017.

[ic20] I. Grenet, Y. Yin, J.-P. Comet, and E. Gelenbe. Machine learning to predict toxicity of compounds. In *Proceedings of the 27th International Conference on Artificial Neural Networks (ICANN)*, volume 11139 of *LNCS*, pages 335–345, 2018.

[ic21] J. Behaegel, J.-P. Comet, and M. Pelleau. Identification of dynamic parameters for gene networks. In *Proceedings of the 30th IEEE International Conference on Tools with Artificial Intelligence (ICTAI)*, Volos, Greece., November 5-7 2018.

[ic22] D. Boyenval, G. Bernot, H. Collavizza, and J.-P. Comet. What is a cell cycle checkpoint? the totembionet answer. In *Proceedings of the 18th International Conference on Computational Methods in Systems Biology (CMSB)*, volume 12314 of *LNCS*, pages 362–372, online, September 23-25 2020.

[ic23] L. Gibart, G. Bernot, H. Collavizza, and J.-P. Comet. Totembionet enrichment methodology: Application to the qualitative regulatory network of the cell metabolism. In *Proceedings of the 14th International Joint Conference on Biomedical Engineering Systems and Technologies, Volume 3: BIOINFORMATICS*, volume 3, pages 85–92, 2021.

[ic24] L. Gibart, H. Collavizza, and J.-P. Comet. Greening R. Thomas' framework with environment variables: a divide and conquer approach. In *Proceedings of the 19th International Conference on Computational Methods in Systems Biology (CMSB)*, LNBI, pages 36–56, September 22-24 2021.

[ic25] R. Michelucci, J.-P. Comet, and D. Pallez. Evolutionary continuous optimization of hybrid gene regulatory networks. In *Proceedings of the 15th International Conference on Artificial Evolution*, LNCS, october 31-november 2 2022.

[ic26] H. H. Sun, J.-P. Comet, M. Folschette, and M. Magnin. Condition for sustained oscillations in repressilator based on a hybrid modeling of gene regulatory networks. In *Proceedings of the 16th International Joint Conference on Biomedical Engineering Systems and Technologies - BIOINFORMATICS*, pages 29–40. INSTICC, SciTePress, 2023.

[ic27] R. Michelucci, V. Callegari, J.-P. Comet, and D. Pallez. Cellular genetic algorithms for identifying variables in hybrid gene regulatory networks. In *Proceedings of the 27th European Conference, EvoApplications 2024, Held as Part of EvoStar*, LNCS. Springer, april 3–5 2024.

International conferences and workshops without proceedings

[ic-wp1] J.-C. Aude and J.-P. Comet. Construction of protein sequences families. In *24th Aharon Katzir-Katchalsky conference BIOINFORMATICS-STRUCTURE*, Jerusalem, Israel, November 1996.

[ic-wp2] S. Pérès and J.-P. Comet. A formal approach to modelize biological regulatory networks. Workshop theoretical biophysics, Hiddensee, Germany, April 02-05, 2003.

[ic-wp3] G. Bernot, O. Roux, C. Auberger, V. Bassano, F. Cassez, J.-P. Comet, F. Delaplace, A. Richard, O.H. Roux, and F. Tahi. Temporal logics and biological regulatory networks. ECCB Satellite Meeting on Modeling and Simulation of Biological Regulatory Processes, Paris, October 2003.

[ic-wp4] J.-P. Comet, H. Klaudel, and S. Liauzu. Qualitative modelling of genetic networks using high-level Petri nets. IPG'2004, Lyon, France, October 14-15, 2004.

[ic-wp5] D. Mateus, J.-P. Comet, J.-P. Galois, and P. Le Gall. Modeling genetic regulatory networks from specified behaviors. IPG'2006, Lyon, France, November 29th- December 1st, 2006.

[ic-wp6] D. Mateus, J.-P. Comet, J.-P. Galois, and P. Le Gall. Modeling genetic regulatory networks from specified behaviors. BioSysBio'2007 (Systems Biology, Bioinformatics, synthetic biology), Manchester, UK, Jan. 11th-Jan. 13th , 2007 [abstract will be published in BMC Systems Biology – feb. 2007].

Invited international conferences

[iic1] P.P. Slonimski, J.-L. Risler, M.-O. Mossé, A. Hénaut, Y. Diaz, J.-P. Comet, and J.-C. Aude. What can we learn about proteins from complete sequences of microbial genome. In *Protein Science*, volume 6(1), 1997.

[iic2] P.P. Slonimski, M.-O. Mossé, P. Golik, A. Hénaut, Y. Diaz, J.-L. Risler, J.-P. Comet, J.-C. Aude, A. Wozniak, E. Glémet, and J.-J. Codani. The first laws of genomics. In *Microbial and Comparative Genomics in Microbial Genomes II: Sequencing, Functional Analysis and Comparative Genomics*, volume 46(3), Jan 1998.

[iic3] M. Dutreix, J.-P. Comet, A. Cornuéjols, and C. Froidevaux. Determination of cellular drug targets: Searching for functional informations in the jungle of microarrays data. International Conference on Current Trends in Drug Discovery Research, Abstract will be published in a special issue of journal "Medicinal Chemistry Research", India, Feb. 17–20. 2004.

[iic4] G. Bernot, J.-P. Comet, and J. Guespin. Formal methods from computer science to treat temporal properties of biological regulatory networks, applied to mucus production in pseudomonas aeruginosa. Symposium Modeling approaches in Systems Biology, Physiology, and Pathophysiology, Poitiers (Futuroscope), France, October 7–12 2005.

[iic5] G. Bernot, J.-P. Comet, and J. Guespin. Using formal temporal logic to model biological regulatory networks and to propose new wet experiments. abstract in Proc. of SGF annual meeting, Genetics meets Systems Biology: Theory and Practice, p.17, Paris, November 13-15, 2006.

[iic6] G. Bernot, J.-P. Comet, and J. Guespin. A discrete approach to model biological gene regulatory networks and the use of temporal logic to propose wet experiments. Gene regulatory networks: Dynamics, spatial organization and inference: Gennetec International Conference, Torino, Italy, April 23th-2th 2008.

[iic7] G. Bernot and J.-P. Comet. On the use of temporal formal logic to model gene regulatory networks. In F. Masulli, L. Peterson, and R. Tagliaferri, editors, *6th International Meeting on Computational Intelligence Methods for Bioinformatics and biostatistics, CIBB'2009*, volume 6160 of *LNBI/LNCS*, pages 112–138, Genova (Italy), 15-17 October 2009 2010. Springer.

[iic8] J.-P. Comet and G. Bernot. A Hoare logic for gene regulatory networks. In *2nd Workshop on Computational Structural Biology: Integrative Approaches for Modeling Biomolecular Complexes 2013*, Nice (France), 29-31 May 2013 2013.

[iic9] G. Bernot, J.-P. Comet, and O. Roux. A genetically modified Hoare logic that identifies the parameters of a gene networks. In O. Roux and J. Bourdon, editors, *Proceedings of the 13th International Conference on Computational Methods in Systems Biology (CMSB)*, volume 9308 of *LNBI*, pages 8–12, Nantes, France, Sept. 16–18 2015.

Invited national conferences

[inc1] J.-P. Comet and F. Tahi. Structuration et analyse des données d'expression de gènes. Journées Peri-Bio à l'université d'Evry, Avril 2000.

[inc2] G. Bernot, J. Michel-Guespin, A. Zermiline, J.-P. Comet, F. Delaplace, P. Ballet, and P. Amar. Modélisation, observabilité et expérimentation : étude d'un cas, boucle de rétroaction positive dans un réseau de régulation génétique. In *Séminaire d'Autrans « Modélisation et simulation des processus biologiques dans le contexte de la génomique»*, Mars 2002.

[inc3] J. Michel-Guespin, J.-P. Comet, and G. Bernot. Comment valider un modèle mathématique en biologie? AFADL'03, Rennes (France), 15-17 janvier 2003.

[inc4] G. Bernot and J.-P. Comet. Logique temporelle et model-checking pour les réseaux de régulation biologiques. 3èmes Journées de Post-Génomique de la Doua (JPGD'03), Lyon (France), 14-16 mai 2003.

[inc5] G. Bernot, J.-P. Comet, and Z. Khalis. Une extension de la logique de Hoare pour les réseaux génétique. Rencontre scientifique « Formalisme logique, apports et défis pour la modélisation de réseaux de régulation biologique », Rabat, Maroc, 12-15 avril 2011.

[inc6] F. Diener, A. Das, G. Bernot, J.-P. Comet, and F. Eyssette. Correspondence between discrete and piecewise linear models of gene regulatory networks. Actes du colloque à la mémoire d'Emmanuel Isambert, Philosophie, méthodologie et applications de l'analyse non standard, 21-22 décembre 2007, Univ. Paris 7, A. Fruchard, V. Gautheron & T. Sari Eds., Publications de l'Université de Paris 13, p.185-194, 14 février , 2012.

[inc7] G. Bernot, J.-P. Comet, Z. Khalis, A. Richard, and O. Roux. An extension of Hoare logic to identify the parameters of gene regulatory networks. Invited talk, Modélisation Mathématique des Systèmes Complexes, SMAI & SMF, Ecole Centrale Paris (France), 11-13 dec 2013.

[inc8] J.-P. Comet, A. Richard, and A. Muzy. Plasticité des réseaux de neurones: Un modèle de réseaux booléens avec règle de Hebb. Workshop sur la Théorie des réseaux booléens et ses applications en biologie, Nice (France), 2014.

[inc9] J.-P. Comet. Automata, logics and biology. Workshop on "Le Monde des Mathématiques Industrielles" (MOMI'2020), Sophia Antipolis, France, 9-10 march 2020.

[inc10] G. Bernot and J.-P. Comet. Towards a qualitative understanding of cancer metabolism. Symposium Multidisciplinary Approaches in Cancer Research, Sophia Antipolis (France).

National conferences with proceedings

[nc1] J. Behaegel, J.-P. Comet, and M. Pelleau. Identification de paramètres dynamiques de réseaux de gènes. In *Quatorzièmes Journées Francophones de Programmation par Contraintes*, 2018.

PhD and Habilitation

[th1] J.-P. Comet. *Programmation dynamique et comparaison de séquences biologiques.* PhD thesis, Université de Technologie de Compiègne, Novembre 1998.

[th2] J.-P. Comet. *De la bio-informatique textuelle à une approche formelle de la biologie des systèmes.* H.D.R. spécialité informatique, Université d'Evry-Val d'Essonne, Novembre 2006.