

CV – Benoît Valiron, Assistant Professor at CentraleSupélec

1 Current Situation

- Assistant Professor at CentraleSupélec
- Duties : 50% research, 50% teaching
- Address :
Laboratoire Méthodes Formelles (LMF)
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2 Employment

Since Feb. 2015. Assistant Professor, permanent position at CentraleSupélec. Research duties in the Inria/QuaCS team of the LMF (Laboratoire Méthodes Formelles).

Sep. 2013 – Jan. 2015. Postdoc at Université Paris Diderot (in the lab PPS).

Mar. 2011 – Aug. 2013. Postdoc at the University of Pennsylvania (in the CS department).

Sep. 2010 – Feb. 2011. Postdoc at Université Paris 13 (in the lab LIPN).

Oct 2009 – Aug. 2010. Postdoc at Université Joseph Fourier, Grenoble (in the lab LIG).

Oct. 2008 – Sept. 2009. Postdoc at INRIA (in the team TYPICAL of the lab LIX).

3 Education

2004 – 2008. Ph.D. in Mathematics, University of Ottawa, Canada. [tel-00483944]

Supervisor : Peter Selinger.

Title : Semantics for a higher-order functional programming language for quantum computation.

The defense happened on Sep. 25, 2008 in Ottawa.

The jury was

- Prof. Balbir Dhillon (Chair)
- Prof. Peter Selinger (Supervisor)
- Prof. Richard Blure (Examiner)
- Prof. Peter Hofstra (Examiner)
- Prof. Douglas Howe (Examiner)
- Prof. Prakash Panangaden (External examiner – McGill University)

2002 – 2004. Master of Science, Mathematics, University of Ottawa.

Supervisor : Peter Selinger.

Title : A functional programming language for quantum computation with classical control.

4 Student Supervision

Ph.D students (name, starting date, supervision ratio, co-supervisors, co-publications)

- Julien Lamiroy. 2024, 37%, with P. Arrighi and R. Vilmart.

- Jérôme Ricciardi. 2022, 25% with G. Dowek and C. Chareton (CEA-LIST/LSL).
- Nicolas Heurtel. 2022, 75% with P. Arrighi and S. Mansfield (Quandela).
[A4, A5, D25, D26, D27]

Completed Ph.D theses.

- Louis Lemmonier, 2021, 50%, with P. Arrighi. [D28].
Now postdoc in Edinburgh.
- Kostia Chardonnet, 2019, 38%, with P. Arrighi et A. Saurin (IRIF). [D33, D24, D28, E52].
Now postdoc in LORIA (Nancy).
- Agustin Borgna, 2019, 50%, with S. Perdrix (LORIA). [D30]
Now employed at Quantinuum.
- Dongho Lee, 2018, 37%, with F. Boulanger et V. Perrelle (CEA-LIST). [D29].
Now postdoc at Dalhousie University (Canada).
- Timothée Goubault de Brugière (2017-2020), 50%, with M. Baboulin.
[D38, D35, D34, A9, A6, A7, A8].
Now employed at Quandela.
- Yann Hamdaoui (2014-2018), 50%, with C. Faggian (IRIF). [I67] (draft).
Now Software Engineer at Tweag I/O.

Master Internships

- Srijita Nandi, M1 QDCS.

Completed Internships.

- Nicolas Heurtel, CentraleSupélec, 2022.
- Kostia Chardonnet, M2 MPRI, 2020. Co-direction : Alexis Saurin.
- Nicolas Nalpon, M2 MPRI, 2018.
- Skander Kazdaghli, CentraleSupélec, 2018. Co-direction : Marc Baboulin.
- Alexandre Clément, M2 LMFI, 2018. Co-direction : Michele Pagani (IRIF).
- Baptiste Colin, Mines-ParisTech, 2018.
- Nicolas Blanco, M2 LMFI, 2015.

5 Funding and Grants

I only list the projects that I am co-managing.

- ANR SoftQPro « Software-based quantum program and resource optimisation » (2017-2021).
→ Co-PI with Simon Perdrix at LORIA.
Partners : LMF, LORIA, ATOS/Bull.
- ECOS-Sud QuCa « Quantum Calculi » (2018-2020).
Funding for travels.
Partners : LMF, LORIA, Buenos Aires (CONICET/UBA), Montevideo
- BPI/GDN Quantex « Quantum Simulation and Emulation » (2018-2021).
→ WP leader.
Partners : LMF, LORIA, ATOS/Bull.
- Equip « Engineering for Quantum Information Processors » (2020-...).
Project internal to Inria.
- SticAmSud Qapla' « Quantum aspects of programming languages » (2021-2023).
Funding for travels.
Partners : Inria (LMF, LORIA), Buenos Aires (CONICET/UBA), Montevideo, Universidad de Chile, Universidade Federal de Santa María (Brazil)
- HPCQS « High Performance Computer and Quantum Simulator hybrid » (2021-2026).
European project EuroHPC.

- Partners : Allemagne (Forschungszentrum Jülich GmbH, ParTec AG, Parity Quantum Computing GmbH, Fraunhofer IAF, EURICE); France (CEA, CNRS, Inria, GENCI, ATOS/Bull); Italie (CNR, CINECA, Flysight Srl); Irlande (Irish Centre for High-End Computing); Autriche (University of Innsbruck); Espagne (Barcelona Supercomputing Center).
- PEPR EPIQ : large French national grant for quantum software (2022-2027)
 - WP leader.
 - Funding for 3 Ph.D and 8 years of postdocs.
 - Partners : a dozen institutions France-wise.
 - HQI : French « Initiative Nationale Hybride HPC Quantique » (2022-2026).
 - Task leader.
 - Funding for 1 Ph.D and 5 years of postdocs
 - Partners : CEA/LIST-LSL, LORIA (Nancy).
 - QCOMICAL : European MSCA Staff Exchange program (2024-2028)
 - co-PI.
 - Funding for travels.
 - Partners in Argentina, France, Italy, Uruguay.

6 Software

Language Quipper. Quipper is a quantum programming language. Embedded in Haskell, it was one of the first languages to code scalable, non-trivial algorithms. The design choices made for Quipper have served as a framework for many subsequent languages.

- I am one of the founder and main developer of the language,
- Website <https://www.mathstat.dal.ca/~selinger/quipper/>
- Publications related to Quipper : [H65, D44, D45, E57, D41, A11, D29]

Language Qbricks. Developed in collaboration with CEA-List, Qbrick is a circuit description language written in Why3. It allows Why3 logic to be used to specify subroutines and quantum programs, and to have them certified using SMT solvers.

- I contributed to the theory behind the software.
- Website <https://github.com/Qbricks>
- Publications related to Qbricks : [D31]

7 Committees

I have been on the program committees of the following conferences and workshops : AFADL 2024 ; CSL 2025 ; DCM 2014 ; ESOP 2024 FoSSACS 2020 ; IWQC 2024 ; MFPS 2010, 2018 ; QPL 2017, 2018, 2020, 2021 ; 2024 ; RC 2016, 2019 ; TTCS 2020 ; WADT 2022. I have also been on the organizing committee of POPL 2017 and IWQC 2023, on the Extended Review Committee for ICFP 2019, and I have been PC co-chair and in charge of the organization of QPL 2020 and 2023.

8 Responsibilities

Administration – Local

- 2024-now. Research Council of University Paris Saclay
- 2024-now. Research Council of CentraleSupélec
- 2019-now. Executive committee of the Quantum Hub of Paris Saclay.
- 2018-2023. “Conseil d’administration” of CentraleSupélec.
- 2015-2019. “Conseil de laboratoire” and “commission matériel” at LRI.

Administration – National and International

- Member of CN QUANTIQUE AFNOR/CN QT, the French normalization working group on quantum technologies
- Member of the IFIP Working Group on Foundations of Quantum Computation (WG 1.11 / 2.17).

List of Publications — Benoît Valiron

1 Summary

- 19 journal articles
- editor for 2 proceedings of conferences with review panel
- 2 book chapters
- 28 articles in proceedings of conferences with review panel

2 Journal

- [A1] Benoît Valiron. Semantics of quantum programming languages : Classical control, quantum control. *Journal of Logical and Algebraic Methods in Programming*, 128 :100790, 2022.
- [A2] Théodore Chapuis-Chkaiban, Zeno Toffano, and Benoît Valiron. On new pagerank computation methods using quantum computing. *Quantum Information Processing*, 22(3) :138, 2023.
- [A3] Pablo Arrighi, Christopher Cedzich, Marin Costes, Ulysse Rémond, and Benoît Valiron. Addressable quantum gates. *ACM Transactions on Quantum Computing*, 4(3) :1–41, 2023.
- [A4] Nicolas Heurtel, Andreas Fyrillas, Grégoire de Gliniasty, Raphaël Le Bihan, Sébastien Malherbe, Marceau Pailhas, Eric Bertasi, Boris Bourdoncle, Pierre-Emmanuel Emeriau, Rawad Mezher, Luka Music, Nadia Belabas, Benoît Valiron, Pascale Senellart, Shane Mansfield, and Jean Senellart. Perceval : A software platform for discrete variable photonic quantum computing. *Quantum*, 7 :931, 2023.
- [A5] Nicolas Heurtel, Shane Mansfield, Jean Senellart, and Benoît Valiron. Strong simulation of linear optical processes. *Computer Physics Communications*, 291 :108848, 2023.
- [A6] Timothée Goubault De Brugière, Marc Baboulin, Benoît Valiron, Simon Martiel, and Cyril Allouche. Gaussian elimination versus greedy methods for the synthesis of linear reversible circuits. *ACM Transactions on Quantum Computing*, 2(3) :1–26, 2021.
- [A7] Timothée Goubault de Brugière, Marc Baboulin, Benoît Valiron, Simon Martiel, and Cyril Allouche. Decoding techniques applied to the compilation of CNOT circuits for NISQ architectures. *Science of Computer Programming*, page 102726, 2021.
- [A8] Timothée Goubault de Brugière, Marc Baboulin, Benoît Valiron, Simon Martiel, and Cyril Allouche. Reducing the depth of linear reversible quantum circuits. *IEEE Transactions on Quantum Engineering*, 2 :1–22, 2021.
- [A9] Timothée Goubault de Brugière, Marc Baboulin, Benoît Valiron, and Cyril Allouche. Quantum circuits synthesis using Householder transformations. *Comput. Phys. Commun.*, 248 :107001, 2020.
- [A10] Pablo Arrighi, Alejandro Díaz-Caro, and Benoît Valiron. The vectorial lambda-calculus. *Information and Computation*, 254 :105–139, 2017.
- [A11] Artur Scherer, Benoît Valiron, Siun-Chuon Mau, D. Scott Alexander, Eric van den Berg, and Thomas E. Chapuran. Concrete resource analysis of the quantum linear-system algorithm used to compute the electromagnetic scattering cross section of a 2D target. *Quantum Information Processing*, 16(3) :60, 2017.
- [A12] Benoît Valiron, Neil J. Ross, Peter Selinger, Dana Scott Alexander, and Jonathan M. Smith. Programming the quantum future. *Communications of the ACM*, 58(8) :52–61, 2015.

- [A13] Benoît Valiron and Steve Zdancewic. Modeling simply-typed lambda calculi in the category of finite vector spaces. *Scientific Annals of Computer Science*, 24(2) :325–368, 2014.
- [A14] Ali Assaf, Alejandro Díaz-Caro, Simon Perdrix, Christine Tasson, and Benoît Valiron. Call-by-value, call-by-name and the vectorial behaviour of the algebraic lambda-calculus. *Logical Methods in Computer Science*, 10(4), 2014.
- [A15] G. Chiribella, G. M. D’Ariano, P. Perinotti, and B. Valiron. Quantum computations without definite causal structure. *Physical Review A*, 88 :022318, 2013.
- [A16] Benoît Valiron. A typed, algebraic, computational lambda-calculus. *Mathematical Structures in Computer Science*, 23(2) :504–554, 2013.
- [A17] Benoît Valiron. Quantum computation : From a programmer’s perspective. *New Generation Computing*, 31(1) :1–26, 2013.
- [A18] Benoît Valiron. Quantum computation : a tutorial. *New Generation Comput.*, 30(4) :271–296, 2012.
- [A19] Peter Selinger and Benoît Valiron. A lambda calculus for quantum computation with classical control. *Mathematical Structures in Computer Science*, 16 :527–552, 2006.

3 Proceeding (editor)

- [B20] Shane Mansfield, Benoît Valiron, and Vladimir Zamdzhiev, editors. *Proceedings of the Twentieth International Conference on Quantum Physics and Logic, QPL 2023*, volume 384 of *EPTCS*, 2023.
- [B21] Benoît Valiron, Shane Mansfield, Pablo Arrighi, and Prakash Panangaden, editors. *Proceedings of the 17th International Conference on Quantum Physics and Logic (QPL 2020)*, volume 340 of *EPTCS*, 2021.

4 Book Chapters

- [C22] Christophe Chareton, Sébastien Bardin, Dongho Lee, Benoît Valiron, Renaud Vilmart, and Zhaowei Xu. Formal methods for quantum programs : A survey. Draft, to appear as a book chapter, 2021.
- [C23] Peter Selinger and Benoît Valiron. Quantum lambda-calculus. In Simon Gay and Ian Mackie, editors, *Semantic Techniques in Quantum Computation*, chapter 4, pages 135–172. Cambridge University Press, 2009.

5 Conference Proceedings with Review Panel

- [D24] Kostia Chardonnet, Benoît Valiron, and Renaud Vilmart. Geometry of interaction for ZX-diagrams. In *Proceedings of the 46th International Symposium on Mathematical Foundations of Computer Science, MFCS 2021*, volume 202 of *LIPICs*, pages 30 :1–30 :16, 2021.
- [D25] Alexandre Clément, Nicolas Heurtel, Shane Mansfield, Simon Perdrix, and Benoît Valiron. LOv-calculus : A graphical language for linear optical quantum circuits. In Stefan Szeider, Robert Ganian, and Alexandra Silva, editors, *47th International Symposium on Mathematical Foundations of Computer Science, MFCS 2022, August 22-26, 2022, Vienna, Austria*, volume 241 of *LIPICs*, pages 35 :1–35 :16, 2022.
- [D26] Alexandre Clément, Nicolas Heurtel, Shane Mansfield, Simon Perdrix, and Benoît Valiron. A complete equational theory for quantum circuits. In *38th Annual ACM/IEEE Symposium on Logic in Computer Science, LICS 2023, Boston, MA, USA, June 26-29, 2023*, pages 1–13. IEEE, 2023.
- [D27] Alexandre Clément, Nicolas Heurtel, Shane Mansfield, Simon Perdrix, and Benoît Valiron. A complete equational theory for quantum circuits. Presentation accepted at the 18th Conference on the Theory of Quantum Computation, Communication and Cryptography (TQC 2023), in Aveiro, Portugal., 2023.
- [D28] Kostia Chardonnet, Louis Lemmonier, and Benoît Valiron. Categorical semantics of reversible pattern-matching. In *Pre-proceedings of MFPS 2021*, 2021.
- [D29] Dongho Lee, Valentin Perrelle, Benoît Valiron, and Zhaowei Xu. Concrete categorical model of a quantum circuit description language with measurement. In *Proceedings of the IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS 2021)*, 2021. To appear.
- [D30] Agustín Borgna, Simon Perdrix, and Benoît Valiron. Hybrid quantum-classical circuit simplification with the ZX-calculus. In *Asian Symposium on Programming Languages and Systems (APLAS 2021)*, pages 121–139, 2021.
- [D31] Christophe Chareton, Sébastien Bardin, François Bobot, Valentin Perrelle, and Benoît Valiron. An automated deductive verification framework for circuit-building quantum programs. In Nobuko Yoshida, editor, *Programming Languages and Systems - 30th European Symposium on Programming, ESOP 2021, Held as Part of the European Joint Conferences on Theory and Practice of Software, ETAPS 2021, Luxembourg City, Luxembourg, March 27 - April 1, 2021, Proceedings*, volume 12648 of *Lecture Notes in Computer Science*, pages 148–177. Springer, 2021.
- [D32] Hai Nguyen Van, Thibaut Balabonski, Frédéric Boulanger, Chantal Keller, Benoît Valiron, and Burkhart Wolff. On the semantics of polychronous polytimed specifications. In *International Conference on Formal Modeling and Analysis of Timed Systems (FORMATS 2020)*, pages 23–40. Springer, Cham, 2020.
- [D33] Kostia Chardonnet, Alexis Saurin, and Benoît Valiron. Toward a curry-howard equivalence for linear, reversible computation. In *International Conference on Reversible Computation (RC 2020)*, pages 144–152. Springer, Cham, 2020.
- [D34] Timothée Goubault de Brugière, Marc Baboulin, Benoît Valiron, Simon Martiel, and Cyril Allouche. Quantum CNOT circuits synthesis for NISQ architectures using the syndrome decoding problem. In *International Conference on Reversible Computation (RC 2020)*, pages 189–205. Springer, Cham, 2020.

- [D35] Timothée Goubault De Brugière, Marc Baboulin, Benoît Valiron, and Cyril Allouche. Synthesizing quantum circuits via numerical optimization. In *19th International Conference in Computational Science - ICCS 2019*, pages 3–16, 2019.
- [D36] Benoît Valiron and Steve Zdancewic. Finite vector spaces as model of simply-typed lambda-calculi. In Gabriel Ciobanu and Dominique Méry, editors, *Theoretical Aspects of Computing - ICTAC 2014 - 11th International Colloquium, Bucharest, Romania, September 17-19, 2014. Proceedings*, volume 8687 of *Lecture Notes in Computer Science*, pages 442–459. Springer, 2014.
- [D37] Amr Sabry, Benoît Valiron, and Juliana Kaizer Vizzotto. From symmetric pattern-matching to quantum control. In Christel Baier and Ugo Dal Lago, editors, *Proceedings of the 21st International Conference on Foundations of Software Science and Computation Structures (FOSACS'18)*, volume 10803 of *Lecture Notes in Computer Science*, pages 348–364, Thessaloniki, Greece, 2018. Springer.
- [D38] C. Allouche, M. Baboulin, T. Goubault de Brugière, and B. Valiron. Reuse method for quantum circuit synthesis. In D. Marc Kilgour, Herb Kunze, Roman Makarov, Roderick Melnik, and Xu Wang, editors, *Recent Advances in Mathematical and Statistical Methods, post-proceedings of the IV AMMCS International Conference on Applied Mathematics, Modeling and Computational Science, Waterloo, Canada, August 2025, 2017*, pages 3–12. Springer International Publishing, 2018.
- [D39] Hai Nguyen Van, Thibaut Balabonski, Frédéric Boulanger, Chantal Keller, Benoît Valiron, and Burkhart Wolff. A symbolic operational semantics for TESL - with an application to heterogeneous system testing. In Alessandro Abate and Gilles Geeraerts, editors, *Formal Modeling and Analysis of Timed Systems - 15th International Conference, FORMATS 2017, Berlin, Germany, September 5-7, 2017, Proceedings*, volume 10419 of *Lecture Notes in Computer Science*, pages 318–334, Berlin, Germany, 2017. Springer.
- [D40] Ugo Dal Lago, Claudia Faggian, Benoît Valiron, and Akira Yoshimizu. The geometry of parallelism : classical, probabilistic, and quantum effects. In Giuseppe Castagna and Andrew D. Gordon, editors, *Proceedings of the 44th ACM SIGPLAN Symposium on Principles of Programming Languages (POPL'17)*, pages 833–845, Paris, France, 2017. ACM.
- [D41] Benoît Valiron. Generating reversible circuits from higher-order functional programs. In Simon J. Devitt and Ivan Lanese, editors, *Proceedings of the 8th International Conference on Reversible Computation (RC'16)*, volume 9720 of *Lecture Notes in Computer Science*, pages 289–306, Bologna, Italy, 2016. Springer.
- [D42] Ugo Dal Lago, Claudia Faggian, Benoît Valiron, and Akira Yoshimizu. Parallelism and synchronization in an infinitary context. In *Proceedings of the 30th Annual ACM/IEEE Symposium on Logic in Computer Science (LICS'15)*, pages 559–572, Kyoto, Japan, 2015. IEEE Computer Society.
- [D43] Michele Pagani, Peter Selinger, and Benoît Valiron. Applying quantitative semantics to higher-order quantum computing. In Suresh Jagannathan and Peter Sewell, editors, *Proceedings of the 41st ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL'14)*, pages 647–658, San Diego, California, USA, 2014. ACM.
- [D44] Alexander S. Green, Peter LeFanu Lumsdaine, Neil J. Ross, Peter Selinger, and Benoît Valiron. An introduction to quantum programming in quipper. In Gerhard W. Dueck and D. Michael Miller, editors, *Proceedings of the 5th International Conference on Reversible Computation (RC'13)*, volume 7948 of *Lecture Notes in Computer Science*, pages 110–124, Victoria, BC, Canada, 2013. Springer.
- [D45] Alexander S. Green, Peter LeFanu Lumsdaine, Neil J. Ross, Peter Selinger, and Benoît Valiron. Quipper : A scalable quantum programming language. In Hans-Juergen Boehm and Cormac

- Flanagan, editors, *Proceedings of the ACM SIGPLAN Conference on Programming Language Design and Implementation, (PLDI'13)*, pages 333–342, Seattle, WA, USA, 2013. ACM.
- [D46] Pablo Arrighi, Alejandro Díaz-Caro, and Benoît Valiron. Subject reduction in a curry-style polymorphic type system with a vectorial structure. volume 88 of *Electronic Proceedings in Theoretical Computer Science*, pages 1–15, 2011.
- [D47] Benoît Valiron. Semantics of a typed algebraic lambda-calculus. volume 26 of *Electronic Proceedings in Theoretical Computer Science*, pages 147–158, 2010. Preliminary work to the journal paper [A16].
- [D48] Benoît Valiron. On quantum and probabilistic linear lambda-calculi (extended abstract). In B. Coecke, I. Mackie, P. Panangaden, and P. Selinger, editors, *Proceedings of the Joint 5th International Workshop on Quantum Physics and Logic and 4th Workshop on Developments in Computational Models (QPL/DCM 2008)*, volume 270 of *Electronic Notes in Theoretical Computer Science*, pages 121–128, Reykjavik, Iceland, 2011.
- [D49] Peter Selinger and Benoît Valiron. A linear-non-linear model for a computational call-by-value lambda calculus (extended abstract). In Roberto M. Amadio, editor, *Proceedings of the 11th International Conference on Foundations of Software Science and Computational Structures (FOSSACS'08)*, volume 4962 of *Lecture Notes in Computer Science*, pages 81–96, Budapest, Hungary, 2008. Springer.
- [D50] Peter Selinger and Benoît Valiron. On a fully abstract model for a quantum linear functional language. In Peter Selinger, editor, *Proceedings of the Fourth International Workshop on Quantum Programming Languages (QPL'06)*, volume 210 of *Electronic Notes in Theoretical Computer Science*, pages 123–137, Oxford, UK., July 2008.
- [D51] Peter Selinger and Benoît Valiron. A lambda calculus for quantum computation with classical control. In Pawel Urzyczyn, editor, *Proceedings of the Seventh International Conference on Typed Lambda Calculi and Applications, TLCA'05*, volume 3461 of *Lecture Notes in Computer Science*, pages 354–368, Nara, Japan, April 2005. Springer Verlag. Journal version appeared in MSCS [A19].

6 Other Proceedings

- [E52] Kostia Chardonnet, Alexis Saurin, and Benoît Valiron. Towards a curry-howard correspondence for linear, reversible computation. In *5th International Workshop on Trends in Linear Logic and Applications (TLLA 2021)*, 2021.
- [E53] Frédéric Boulanger, Dominique Marcadet, Martin Rayrole, Safouan Taha, and Benoît Valiron. A time synchronization protocol for A664-P7. In *proceedings of the 37th IEEE/AIAA Digital Avionics Systems Conference (DASC'18)*, pages 1–9, 2018.
- [E54] Andrew Polonsky, Michele Pagani, and Benoît Valiron. Toward analytic rewriting theory. In *Informal Electronic Proceedings of the 8th International Workshop on Higher-Order Rewriting (HOR'16)*, Porto, Portugal, 2016.
- [E55] Hai Nguyen Van, Thibaut Balabonski, Frédéric Boulanger, Safouan Taha, Benoît Valiron, Burkhart Wolff, and Lina Ye. Towards a formal semantics of the TESL specification language. In Benoît Combemale, Julien DeAntoni, Jeff Gray, Daniel Balasubramanian, Bruno Barroca, Sahar Kokaly, Gergely Mezei, and Pieter Van Gorp, editors, *Joint Proceedings of the 3rd International Workshop on the Globalization Of Modeling Languages and the 9th International Workshop on Multi-Paradigm Modeling co-located with ACM/IEEE 18th International Conference on Model Driven Engineering Languages and Systems, GEMOC+MPM@MoDELS 2015, Ottawa,*

Canada, September 28, 2015., volume 1511 of *CEUR Workshop Proceedings*, pages 14–19. CEUR-WS.org, 2015.

- [E56] Michele Pagani and Benoît Valiron. Work in progress : Algebraic abstract reduction systems. In *Informal Proceedings of the Workshop on Infinitary Rewriting (WIR'14)*, 2014.
- [E57] Jonathan M. Smith, Neil J. Ross, Peter Selinger, and Benoît Valiron. Quipper : Concrete resource estimation in quantum algorithms. In *Informal Proceedings of QAPL'14, Grenoble, France*, 2014.
- [E58] Alejandro Díaz-Caro, Simon Perdrix, Christine Tasson, and Benoît Valiron. Equivalence of algebraic lambda-calculi (work in progress). In *Pre-Proceedings of the 5th International Workshop on Higher-Order Rewriting (HOR'10), Edinburgh, 14 juillet 2010*, pages 6–11, 2010. This work has been finalized in [A14].
- [E59] Benoît Valiron. Orthogonality and algebraic lambda-calculus. In Bob Coecke, Prakash Panangaden, and Peter Selinger, editors, *Proceedings of the 7th International QPL Workshop Quantum Physics and Logic*, pages 169–175, Oxford, UK, 2010.
- [E60] Benoît Valiron. Quantum typing. In Peter Selinger, editor, *Proceedings of the Second International Workshop on Quantum Programming Languages*, volume 33 of *TUCS General Publication*, pages 163–178, Turku, Finland, July 2004. TUCS.

7 Theses

- [F61] Benoît Valiron. *Semantics for a Higher Order Functional Programming Language for Quantum Computation*. PhD thesis, University of Ottawa, 2008.
- [F62] Benoît Valiron. *A Functional Programming Language for Quantum Computation With Classical Control*. Master thesis, University of Ottawa, 2004.

8 Magazines Scientifiques

- [G63] Benoît Valiron. A formal analysis of quantum algorithms. *ERCIM News*, 112 :23–24, January 2018.
- [G64] Benoît Valiron. Programmer un ordinateur quantique. Column in *MathsInfos Hors-Série Numéro 3*, published by Fondation Mathématique de Paris, 2017.

9 Reports

- [H65] Alexander S. Green, Peter L. Lumsdaine, Neil J. Ross, Peter Selinger, and Benoît Valiron. Report on the Quipper language, version 0.3, with GFI algorithm implementations (updated for revision 0.3-4). Report to IARPA, for official use only, 2012.

10 Drafts

- [I66] Kostia Chardonnet, Marc de Visme, Benoît Valiron, and Renaud Vilmart. The many-worlds calculus : Representing quantum control. 2022.
- [I67] Y. Hamdaoui and B. Valiron. An interactive proof of termination for a concurrent lambda-calculus with references and explicit substitution. Draft., 2018.
- [I68] R. Eisenberg, B. Valiron, and S. Zdancewic. Typechecking linear data : Quantum computation in Haskell. Draft., 2012.
- [I69] B. Valiron. Sums and triangular stacks of integers. Draft., 2010.

11 Posters

- [J70] C. Allouche, M. Baboulin, T. Goubault de Brugière, and B. Valiron. Quantum circuit synthesis with Householder transformations. Poster presented at QTech 2018 in Paris.
- [J71] C. Allouche, M. Baboulin, T. Goubault de Brugière, and B. Valiron. Quantum circuit synthesis with Householder matrices. Poster presented at Journées annuelles du GdR Informatique-Mathématique 2018.
- [J72] A. Sabry, J. Vizzotto, and B. Valiron. From symmetric pattern-matching to quantum control. Poster presented at QPL'17 in Nijmegen.
- [J73] B. Valiron. Bell inequalities for (almost) free. Poster presented at TQC'17 in Paris.