

Burak Ekici, Ph.D.

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Languages: Turkish(native), English (operational), French(intermediate), Italian(intermediate).

Education

- 2013-2015 PhD Student @ *University Joseph Fourier*, Grenoble-France
Thesis: Certification of programs with computational effects [[manuscript](#)][[slides](#)]
Advisors: Jean-Guillaume Dumas, Dominique Duval, Damien Pous.
- 2009-2012 MSc Student @ *Yasar University*, Izmir-Turkey.
Thesis: A parallelization approach to Haskell language through category theoretic implementations
Advisor: Ahmet H. Koltuksuz.
- 2004-2009 BSc Student @ *Izmir Institute of Technology*, Izmir-Turkey.
Thesis: Parallelization of mathematical functions of a cryptographic and multi-precision library, Crympix
Advisor: Ahmet H. Koltuksuz.

Research Interests

Semantics of computational effects, categorical computer science, formal logic, type theory, Coq.

Research Experience

- 2011-2012 Undergraduate researcher @ *Yasar University*, Izmir-Turkey.
- 2010-2011 Trainee researcher @ *European Commission Joint Research Centre*, Ispra(VA)-Italy.
- 2009-2010 Undergraduate researcher @ *Yasar University*, Izmir-Turkey.
- 2007-2009 Undergraduate researcher @ *IS³ Lab*, Izmir-Turkey.

Publications & Abstracts

CONFERENCE PAPERS

- 2015 Jean-Guillaume Dumas, Dominique Duval, *Burak Ekici*, Damien Pous and Jean-Claude Reynaud. [Hilbert-Post completeness for the exception effect](#). *MACIS 2015 : Sixth International Conference on Mathematical Aspects of Computer and Information Sciences*, Berlin, Germany, 11–13 November 2015.

- 2014 Jean-Guillaume Dumas, Dominique Duval, *Burak Ekici* and Jean-Cluaude Reynaud. “[Certified proofs in programs involving exceptions.](#)” *CICM 2014 : Eighth Conference on Intelligent Computer Mathematics, Coimbra, Portugal, 7–11 July 2014, CEUR Workshop Proceedings, no 1186, paper 20.*
- 2014 Jean-Guillaume Dumas, Dominique Duval, *Burak Ekici* and Damien Pous. “[Formal verification in Coq of program properties involving the global state effect](#)” *JFLA 2014 : Journées Francophones des Langages Applicatifs, Fréjus, France, 8–11 January 2014.*
- 2010 *Burak Ekici*, Çağatay Yücel, Görkem Kılınç, Ahmet H. Koltuksuz, “**Implementations of Category Theory in Computer Science.**”, *9th National Mathematics Symposium, Karadeniz Technical University, October 2010.*
- 2010 K. Kratchanov, E. Golemanova, T. Golemanov, T. Ercan, *B. Ekici*. “[Implementation of Search Strategies in Control Network Programming.](#)”, *Procedural and Non-Procedural In: Proc. Intl. Symposium in Innovations in Intelligent Systems and Applications (INISTA 2010), June 2010, Kayseri, Turkey, 386-390.*

RESEARCH REPORTS

- 2015 *Burak Ekici*. “[IMP with exceptions over decorated logic.](#)” *Pre-proceedings of Trends in Functional Programming (TFP 2015). Rejected from the post-proceedings of TFP 2015.*

ABSTRACTS

- 2014 Jean-Guillaume Dumas, Dominique Duval, *Burak Ekici* and Damien Pous. “[Program certification with computational effects.](#)” *Journées Nationales de Calcul Formel (JNCF) 2014, Marseille, France November 2014.*
- 2014 *Burak Ekici*. “[Certification of programs with computational effects.](#)” *Doctoral session. CICM 2014 : Eighth Conference on Intelligent Computer Mathematics, Coimbra, Portugal, 7–11 July 2014.*

Talks

INVITED

- 10.11.2015 [Relative Hilbert-Post completeness for exceptions.](#) Foundations seminar, Ljubljana-Slovenia.

OTHER RECENT TALKS

- 03.06.2015 [IMP with exceptions over decorated logic.](#) TFP’15, Sophia-Antipolis-France.
- 20.11.2014 [Certification of programs with computational effects.](#) CASYS-MEFF Seminars, Grenoble-France.
- 05.11.2014 [Program certification with computational effects.](#) JNCF’14, Marseille-France.
- 11.07.2014 [Certification of programs with computational effects.](#) CICM’14, Coimbra-Portugal.
- 18.02.2014 [{IMP + Exc} over Decorated Logic.](#) LJK, Grenoble-France.

- 09.01.2014 [Formal verification in Coq of program properties involving the global state effect.](#) JFLA'2014, Fréjus - France.
- 05.12.2013 [Formal verification in Coq of program properties involving the global state effect.](#) Séminaires LJK-Modèles et Algorithmes Déterministes: BIPOP-CASYS, Grenoble-France.
- 11.10.2013 [Proofs About Programs Involving Computational Effects.](#) Exposé au LJK, Grenoble-France.
- 23.05.2013 [Certification of Programs with Computational Effects.](#) EJCP 2013, Dinard-France.

Events

INVITED

- 09-13.11.15 University of Ljubljana (invited by Dr. Andrej Bauer), Ljubljana, Slovenia.

OTHER EVENTS RECENTLY ATTENDED

- 03-05.06.15 The Sixteenth Symposium on Trends in Functional Programming (TIFP'15), INRIA, Sophia-Antipolis-France.
- 26-29.05.15 Colloque Inter'Actions en Mathématiques 2015 (member of the organization committee), Institut Fourier, Grenoble-France.
- 03-07.11.14 Journées Nationales de Calcul Formel (JNCF'14), CIRM, Marseille-France.
- 07-11.07.14 Conferences on Intelligent Computer Mathematics (CICM'14), Coimbra-Portugal.
- 07-18.04.14 PhD school on semantics of proofs and certified mathematics by Institut Henri Poincaré, CIRM, Marseille-France.
- 07-11.01.14 JFLA: Journées Francophones des Langages Applicatifs, La-villa-clythia, Fréjus-France.
- 23-31.05.13 École Jeunes Chercheurs en Programmation, Inria, Rennes-France.
- 17-29.04.12 IWOSI: The Information Warfare, Cyber Warfare and Open Sources Intelligence (member of the organization committee), Izmir-Turkey.
- 01-02.09.09 Workshop on The Security of Information and Communication Technologies: A Turkey & EC-JRC Joint Effort, Izmir-Turkey.
- 25-26.09.09 Workshop on Multi-Core Architectures & Parallel Programming with Intel Software Tools (member of the organization committee), Izmir-Turkey.

Code

[CoqEffects](#): Coq certified proofs of programs involving computational effects:

- [states](#)
- [exceptions](#)
- [states-exceptions](#)
- [imp-states](#)
- [imp-states-exceptions](#)

- Hilbert-Post completeness
 - states-core language
 - exceptions-programmers' language
 - exceptions-core language
 - soundness of implementation: programmers' language out of core language

Miscellaneous

Programming: C/C++, HTML, \LaTeX , R, Haskell, Coq, Eff.

Libraries/Platforms: CRYMPIX, OpenMP, WHY3.

Referees

Jean-Guillaume Dumas

LJK, University Joseph Fourier

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Dominique Duval

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