

# Burak Ekici, Ph.D.

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

## Education & Employment

- 2016 Post-Doctoral Research Fellow @ *The University of Iowa*, Iowa City-IA, USA.  
*Project:* **Integrating CVC4 into SMTCoq.**  
*Advisor:* Cesare Tinelli.  
*With:* Chantal Keller and Alain Mebsout.
- 2013-2015 PhD Student @ *University Grenoble Alpes (formerly 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 @ *Yaşar University*, Izmir-Turkey.  
*Thesis:* **A parallelization approach to Haskell language through category theoretic implementations.**  
*Advisor:* Ahmet H. Koltuksuz.
- 2010-2011 Trainee Researcher @ *European Commission Joint Research Centre*, Ispra(VA)-Italy.  
*Project:* **Linearity detection of the growth effect on children fingertips.**  
*Advisor:* Günter-Egon Schumacher.
- 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.  
*With:* Görkem Kılınç and Çağatay Yücel.

## Research Interests

Computational effects, categorical logic, type theory, Coq, SMT.

## Publications & Abstracts

### PAPERS

- 2017 Burak Ekici. “[IMP with exceptions over decorated logic.](#)” (*Submitted.*)
- 2017 Burak Ekici, Alain Mebsout, Cesare Tinelli, Chantal Keller, Guy Katz, Andrew Reynolds

and Clark Barrett. “[SMTCoq: A plug-in for integrating SMT solvers into Coq.](#)” Proc. 29th Int. Conf. on Computer Aided Verification (CAV). Heidelberg, Germany, July 2017. (To appear.)

- 2016 Burak Ekici, Guy Katz, Chantal Keller, Alain Mebsout, Andrew Reynolds and Cesare Tinelli. “[Extending SMTCoq, a Certified Checker for SMT \(Extended Abstract\).](#)” *HaTT 2016: 1st International Workshop on Hammers for Type Theories, Coimbra, Portugal, July 2016.*
- 2015 Jean-Guillaume Dumas, Dominique Duval, Burak Ekici, Damien Pous and Jean-Claude Reynaud. “[Hilbert-Post completeness for the state and the exception effects.](#)” *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-Claude 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, Gökem Kılınc, Ahmet H. Koltuksuz, “[Implementations of Category Theory in Computer Science.](#)”, 9<sup>th</sup> 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 for basic improvements.*

#### 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.*

## Recent Talks

### INVITED

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

### OTHERS

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 Attended

### INVITED

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

### OTHERS

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

Please see my [github repository](#).

## Miscellaneous

Programming: C/C++, Haskell, OCaml, Coq.

Libraries: CRYMPIX, OpenMP, WHY3, SMTCoq.

## Referees

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[Cesare Tinelli](#)

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