

Curriculum Vitae Dan Hernest, PhD 22 September 2015

I was speaker of “Optimized program synthesis from proofs” project financed by the Romanian National Research Council between October 2011 - October 2014. Between June 2010 - July 2011 I was a research postdoc of Queen Mary University of London working on an EPSRC project led by Paulo Oliva. Between January 2010 - June 2010 I was a research postdoc of team VDS of TIMA in Grenoble, France. Between June 2009 - December 2009 I was a research postdoc of Prof. Fernando Ferreira in Lisbon, Portugal. Between February 2007 - February 2009 I had been an associate researcher within the Institute for Informatics of the University of Innsbruck. I am a PhD graduate (doctor, thesis defended on 14 December 2006) of both (in French-German co-tutelle)

1. *Project LogiCal* - director of studies Prof. Jean-Pierre Jouannaud
Laboratoire d’Informatique, École Polytechnique, F-91128 Palaiseau Cedex, France
2. *Project GKLI* - director of studies Prof. Helmut Schwichtenberg
Graduiertenkolleg Logik in der Informatik - Mathematisches Institut der Ludwig-Maximilians-Universität München, Theresienstr. 39, D-80333 München, Germany

I am a Romanian, and thus European citizen. I am single. I am fluent in English, French, Romanian, not fluent in German and I have some elements of Danish.

Email: danhernest@gmail.com **Homepage:** <http://dan.hernest.eu>

PhD Thesis: <http://www.cs.au.dk/~danher/teza/>

Publications: <http://www.cs.au.dk/~danher/pub/>

A survey of my Education and received Degrees is in Section 2 on page 3.

Recommendation letters or even short references can be asked from the following:

1. Prof. Kohlenbach Ulrich — kohlenbach@mathematik.tu-darmstadt.de
2. Dr. Oliva Paulo, Reader — paulo.oliva@eecs.qmul.ac.uk
3. Prof. Schwichtenberg Helmut — schwicht@mathematik.uni-muenchen.de

I wrote the first Dialectica extraction modules for the MinLog system.

I have recently contributed to the revision of the actual mainstream Dialectica module of <http://www.minlog-system.de>, which I enhanced with the Kreisel implication.

1 Papers - the complete list

Modal Functional (‘Dialectica’) Interpretation [with Trifon Trifonov | 30 pages] which presents how Modified Realizability can be used from inside Dialectica interpretation via supra-linear ‘Kreisel implication’ for bettered modular automatic program synthesis. <http://www.fmi.uni-sofia.bg/Members/triffon/mlfd/minlog-for-dialectica>

1.1 Published Papers [3 journal + 6 conference]

In the reversed chronological order of the publication date (1 to 7 are peer-reviewed):

1. *Light Dialectica Revisited* [with Trifon Trifonov] — *journal* Elsevier
Annals of Pure and Applied Logic, volume 2032 (2010), Pages 1379-1389,
<http://dx.doi.org/10.1016/j.apal.2010.04.008>
2. *Light Monotone Dialectica methods for Proof Mining* — *journal* Wiley-VCH
Mathematical Logic Quarterly, volume 55 (2009), issue 5, Pages 551-561,
<http://www.cs.au.dk/~danher/new-pub/H-MLQ.pdf>
<http://dx.doi.org/10.1002/malq.200710093>
3. *Hybrid functional interpretations* [with Paulo Oliva] — Athens, 2008
in Springer LNCS volume 5028, pages 251-260 — Presented at CiE'08,
http://dx.doi.org/10.1007/978-3-540-69407-6_29
4. *Synthesis of moduli of uniform continuity by the Monotone Dialectica
Interpretation in the proof-system MinLog* — Seattle, 2006. Elsevier - ENTCS,
volume 174 (2007), issue 5, Pages 141-149. Presented at LFMTP@FLoC'06,
<http://dx.doi.org/10.1016/j.entcs.2007.01.023>
5. *Light Dialectica program extraction from a classical Fibonacci proof* - Elsevier
ENTCS, volume 171 (2007), issue 3, Pages 43-53. Presented at DCM@ICALP'06,
<http://dx.doi.org/10.1016/j.entcs.2006.10.050>
6. *Light Functional Interpretation - an optimization of Gödel's technique towards the
extraction of (more) efficient programs from (classical) proofs* - Oxford, 2005
in Springer LNCS volume 3634, pages 477 - 492 — Presented at CSL'2005
http://dx.doi.org/10.1007/11538363_33
7. *A complexity analysis of functional interpretations* - with Ulrich Kohlenbach
Elsevier's Theoretical Computer Science *journal*, 338(1-3):200-246, 2005
<http://www.brics.dk/RS/03/12/BRICS-RS-03-12.pdf>
<http://dx.doi.org/10.1016/j.tcs.2004.12.019>
8. *A comparison between two techniques of program extraction from classical proofs*
- 03 pages - extended abstract presented at the 17th Computer Science Logic,
Vienna, Austria, 25 Aug 2003 (CSL'2003). Published by the Kurt Gödel Society
(KGS) in the KGS's *Collegium Logicum* series, vol. VIII, 2004, pages 99-102.
<http://www.cs.au.dk/~danher/pub/MDH01-CSL03.pdf>
9. *Classical models are particular cases of Probabilistic models* - 11 pages. Published
in the Proceedings of the 4th International Symposium on Economic Informatics,
the Academy of Economic Sciences (ASE), Bucharest, May 6-9, 1999.
<http://www.cs.au.dk/~danher/Articole/MDH00-ASE99.pdf>

2 Education and work experience [since 1990]

- October 2011 – October 2014: <http://sites.google.com/site/te201130122>
Director of national research project ‘Optimized program synthesis from proofs’
<http://www.fmi.uni-sofia.bg/Members/triffon/mlfd/minlog-for-dialectica>
- September 2010 – June 2011: Post-Doc researcher at Queen Mary, University of London, UK, visiting Paulo Oliva , <http://www.eecs.qmul.ac.uk/~pbo/>
- February 2010 – June 2010: Post-Doc at Laboratoire TIMA, Grenoble, France
- June 2009 – December 2009: Post-Doc researcher at <http://cmf.fc.ul.pt/> visiting Prof. Fernando Ferreira of Logic @ University of Lisbon, Portugal
- March 2007 – March 2009: Post-Doc researcher-and-teacher (K1-Mitarbeiter) of the Institute for Informatics of the University of Innsbruck
- since 14 December 2006: Doctor (PhD graduate) of Ecole Polytechnique, Paris.
 - A scan of my *French Doctor Diploma* is downloadable at <http://www.cs.au.dk/~danher/Diplome/MDH-PhD-Diplom.pdf>
- February 2004 – December 2006:
 - PhD student of the *LogiCal* Project, Laboratoire d’Informatique de l’École Polytechnique (LIX), France - director Prof. Jean-Pierre Jouannaud
 - I continued the thesis work which I had begun in Munich - I thus did a thesis in co-tutelle, see <http://www.dfh-ufa.org>
 - My thesis supervisor from the French side was Prof. Jean-Pierre Jouannaud. The German co-supervisor was Prof. Helmut Schwichtenberg
- November 2001 – January 2004:
 - PhD student of the GKLI (Graduiertenkolleg Logik in der Informatik) Project, Faculty of Mathematics, University of Munich, Germany - thesis supervisor Prof. Helmut Schwichtenberg.
- August 1999 – October 2001:
 - PhD student at BRICS (Basic Research in Computer Science), University of Aarhus, Denmark - scientific advisor Prof. Ulrich Kohlenbach.
 - Also a Teaching Assistant in the Computer Science department of Aarhus University. These 3 years (from Aug. 98) of graduate studies were concluded with a Master degree in Computer Science (*Kandidatuddannelsen i Datalogi*) from the University of Aarhus, Denmark. For MinLog reasons I moved to the GKLI-Project’s PhD program in Munich, Germany (see above)
 - A scan of my *Danish Master Diploma* is downloadable at <http://www.cs.au.dk/~danher/Diplome/MDH-MSc-Diplom.pdf>

- August 1998 – July 1999 :
 - Analyst-programmer at The National Institute for Research and Development in Informatics (<http://www.ici.ro>), Bucharest, Romania.
 - Also a Teaching Assistant and Masters student at the department for Computer Science of the Faculty of Mathematics of the University of Bucharest, Romania. Passed 7 out of 10 examinations with maximum grade. Program not concluded for financial reasons. Moved to BRICS, Denmark (see above)
- August 1994 – July 1998 :
 - Undergraduate student of the Faculty of Mathematics of the University of Bucharest, Romania (profiled on Theoretical Computer Science)
 - Undergraduate studies concluded with the Bachelor degree in Mathematics (speciality Theoretical Computer Science) - my Bachelor thesis supervisor was Prof. George Georgescu
 - A scan of my *Romanian Licence Diploma* is downloadable at <http://www.cs.au.dk/~danher/Diplome/Bachelor/>
- August 1990 – July 1994 :
 - Highschool student in the city of Slatina, department of Olt, Romania. My studies were concluded with the Romanian Bacalaureat final examination
 - A scan of my *Romanian Bacalaureat Diploma* is downloadable at <http://www.cs.au.dk/~danher/Diplome/Bacalaureat/>
 - Participant in the Romanian national and interdepartmental Physics and Mathematics contests. Awarded various prizes, including (chronologically)
 - * a First Prize in the Interdepartmental Mathematics Contest “Gheorghe Țițeica” held in the city of Târgu-Jiu, Romania, in 1991
 - * a Golden Medal in the Balkan Math Olympiad of Athens, Greece, 1992
 - * a Second Prize in the Romanian national Mathematics Olympiad of Arad 1994 (in Romania)
 - Scans of my *Mathematics Olympiads Diplomas* are downloadable at <http://www.cs.au.dk/~danher/Diplome/LyceumOlympiads/>
 - In the summer of 1993 I was a scholar of the Research Science Institute (RSI, see <http://www.cee.org/rsi/>) in the MIT and Harvard Campus in Cambridge, Massachusetts, USA