

# Ana Bove

## Short Curriculum Vitæ

July 2016

### 1. Personal and Contact Data:

<i>Full Name and Gender</i>	Ana Lidia Bove, female
<i>Date and Place of Birth</i>	January 17th, 1968, Montevideo, Uruguay
<i>Nationality</i>	Swedish and Uruguayan
<i>Marital Status</i>	Single; a daughter born in Sweden on Dec. 8th, 2000
<i>Work Address</i>	Department of Computer Science and Engineering Chalmers University of Technology Rännvägen 6B, 412 96 Göteborg, Sweden
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### 2. Computer Science Education and Titles:

- *Docent in Computer Science*<sup>1</sup>, Chalmers, Sweden, January 2009.
- *Ph.D. in Computer Science*, Chalmers, Sweden. November 2002. Thesis: *General Recursion in Type Theory*. Supervisor: Björn von Sydow, Examiner: Prof. Bengt Nordström.  
As part of my Ph.D. education I presented my *Licentiate* thesis *Programming in Martin-Löf Type Theory: Unification - A non-trivial Example* in November 1999.
- *M.Sc. in Computer Science*, Univ. de la República, Uruguay, November 1995, 2 years program.
- *Computer Engineer*, Univ. de la República, Uruguay, November 1993, 5 years program.
- *B.Sc. in Computer Science*, National University of Luján, Argentina, June 1991, 5 years program.

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<sup>1</sup>In Sweden, *Docent* is an academic qualification which requires a Ph.D. and documented scientific independence in the form of additional publications beyond those which were required for obtaining a Ph.D., teaching experience, and training in both teaching and scientific mentorship.

### 3. Pedagogical and Leadership Education:

- *The Necessary Conversation*, Chalmers, five half days during November and December 2013.
- *Health and Safety Training*, Chalmers, three days during April and May 2013.
- *Forum for Supervisors*, Chalmers, September – November 2011 and January – June 2012.
- *Leadership Program for Young Researchers*, Chalmers, February – November 2009.
- *Supervision of Research*, Chalmers, March – April 2008.
- *Conflict Resolution*, Univ. of Gothenburg, September – December 2007.
- *Project Leadership for Academics*, Chalmers, September – October, 2005.

### 4. Employment:

- **Department of Computing Science, Chalmers, Sweden:**
  - Feb'10 – : *Associate Professor (Docent)*, including ca 55–85% teaching.
  - Nov'05 – Jan'10: *Assistant Professor*, included 35–50% teaching.
  - Nov'02 – Oct'05: *Post-Doctoral Researcher*, included 25% teaching.
  - Sep'96 – Oct'02: *Ph.D. Student*, included 20% teaching.
- **Computer Science Department, Univ. de la República, Uruguay:**
  - May'95 – Aug'96: *Lecturer*, full time.
  - Aug'92 – Apr'95: *Graduated Teaching Assistant*, 75% of full time.
  - Jun'91 – Jul'92: *Teaching Assistant*, 50 to 75 % of full time.
- **Computer Science School, Uruguay**
  - Apr – May'91 & Jun – Jul'90: *Lecturer* in Automata theory, 25 % of full time.
- **Inter-American Children's Inst., Org. of American States, Uruguay:**
  - Feb'91 – Apr'95: *Analysis, programming and system instruction*, 35 to 75 % of full time.

### 5. Commission of Trust:

- Since May 2016, member of the *Faculty senate (Fakultetsrådet)*, an advisory group to the President of Chalmers consisting of elected members from Chalmers teaching staff representing all departments.
- *Programme Manager* of the Computer Science bachelor programme at the University of Gothenburg, since January 2013.
- *Academic Project Manager* of the EU FET-STREP project on *Formalising Mathematics*, scientific coordinator Prof. Thierry Coquand. From March 2010.

- *Director of Undergraduate Studies*, Chalmers, since September 2005.
- Member of the *Steering Committee* (as representative of the teachers) at the Dep. of Computer Science, Univ. de la República, Uruguay, July 1994 – Apr. 1995 and Jan. – July 1996.

**6. Teaching:** *Undergraduate courses* in Logic, Algebraic Specification and Design of Algorithms, Denotational Semantics, Automata Theory and Formal Languages, Functional Programming and Model of Computations. Supervision of master and bachelor theses, and student projects.

*Postgraduate course* in dependently typed programming.

*Pedagogical Nominations* In 2014, the students of the *Software Engineering* programme at Chalmers nominated me for the pedagogical prize given every year to teachers in the programme for my work in the course in *Finite automata theory and formal languages*.

**7. Ph.D. Students:** At the distance, co-supervised Andrés Sicard-Ramírez, together with Prof. Peter Dybjer. Andrés was a Ph.D. student of the PEDECIBA Informática, Univ. de la República. He defended his thesis, with title *Reasoning about functional programs by combining interactive and automatic proofs*, on July 2014.

Member of the follow-up committee of the Ph.D. students Cláudio Amaral and Jonas Duregård, Chalmers.

## 8. Invited Talks:

- *10 Years of Partiality and General Recursion in Type Theory*, at the FLoC'10 (*Federated Logic Conference*) workshop on *Dependently Typed Programming*, held on 9–10 July 2010, Edinburgh, United Kingdom.
- *Another Look at Function Domains*, at the session on *Mathematically Structured Functional Programming* of the 25th Conference on *Mathematical Foundations of Programming Semantics*, held on 3-7 April 2009, Oxford, United Kingdom.

## 9. Evaluation and Examination Work

- Scientific evaluation of a project proposal in the Innovational Research Incentives Scheme of the Netherlands Organisation for Scientific Research (NWO), October 2015.
- Scientific evaluation of an application for “full dedication researcher” (*régimen de dedicación total*) at the Universidad de la República, Uruguay, February 2015.
- Scientific expert in a senior lecture position in theoretical computer science with special emphasis on formal languages, at the Department of Computing Science at Umeå University, Sweden, March 2013.
- Scientific evaluation of a project proposal on applied research for the Fondo María Viñas of the ANII, Uruguay, June 2012.

- Member of the examining committees of the Ph.D. thesis of
  - Jonas Duregård, with title *Automating Black-Box Property Based Testing*. Supervisor: Prof. Patrik Jansson, Chalmers University of Technology, Sweden, September 2016.
  - Carlos Luna, with title *Formal analysis of security models for mobile devices, virtualization platforms, and domain name systems*. Supervisor: Prof. Gustavo Betarte, Univ. de la República, Uruguay, July 2014.
  - Olov Wilander, with title *On Constructive Sets and Partial Structures*. Supervisor: Prof. Erik Palmgren, Uppsala University, Sweden, December 2011.
  - François Garillot, with title *Generic Proof Tools and Finite Group Theory*. Supervisor: Dr. Georges Gonthier, École Polytechnique, Paris, France, December 2011.
- Member of the evaluation tribunal of the Master Thesis *Compilación y Certificación de Código mediante Análisis Estático de Flujo de Control y de Datos*, Francisco Bavera, December 2005. PEDECIBA Informática, InCo (two years program), Uruguay.

#### 10. Other Recent Activities:

- PC member of CPP 2017, LSFA 2013, TFP 2011 and MSFP 2010, PC chair of PAR 2010.
- Invited speaker at DTP 2010 and at the session dedicated to MSFP at MFPS 2009.
- Previously involved in two ALFA network between universities of the European Union and Latin America.
- Refereed papers for several international conferences and journals since 1994.
- Organised several workshops, symposiums, and two international summer schools.

11. **Languages:** *Spanish:* mother tongue; *English:* very fluent; *Swedish:* fluent.

12. **Publications:** Some of the papers below (those with no copyright) are available via the web page <http://www.cse.chalmers.se/~bove/Papers/papers.html>.

#### Books and Proceedings

- Proceedings of the PAR-2010 workshop on *Partiality and Recursion in Interactive Theorem Provers*, Edinburgh, Scotland, 15th of July 2010. A. Bove, E. Komentantskaya and M. Niqui, editors. EPTCS volume 43.
- *Language Engineering and Rigorous Software Development*. International LerNet ALFA Summer School 2008, Piriápolis, Uruguay, February 24 - March 1, 2008, Revised, Selected Papers. A. Bove, L. Barbosa, A. Pardo, and J. Sousa Pinto, editors. LNCS 5520, 2009.

## Refereed Papers in Journals

- A. Bove, A. Krauss, and M. Sozeau. *Partiality and Recursion in Interactive Theorem Provers — An Overview*. In *Mathematical Structures in Computer Science*, Special Issue 1 (DTP 2010), January 2016, volume 26, pages 38–88. Published online: November 2014
- A. Bove and V. Capretta. *Modelling General Recursion in Type Theory*. *Mathematical Structures in Computer Science*, 15:671–708, February 2005. Cambridge University Press.  
An earlier version of this paper is included in my Ph.D. thesis.
- *Simple General Recursion in Type Theory*. *Nordic Journal of Computing*, 8(1):22–42, Spring 2001.

## Other Refereed Papers

- E. Copello, A. Tasistro, N Szasz, A. Bove and M. Fernández. *Principles of Alpha-Induction and Recursion for the Lambda Calculus in Constructive Type Theory*. In pre-proceedings of the Workshop on Logical and Semantic Frameworks, with Applications (LSFA), September 2015.
- A. Bove, P. Dybjer and A. Sicard-Ramírez. *Combining Interactive and Automatic Reasoning in First Order Theories of Functional Programs*. In 15th International Conference on Foundations of Software Science and Computation Structures (FoSSaCS), March 2012.
- A. Bove, P. Dybjer and A. Sicard-Ramírez. *Embedding a Logical Theory of Constructions in Agda*. In *Programming Languages meets Program Verification (PLPV) 2009*, ACM digital library, January 2009.
- A. Bove and V. Capretta. *A Type of Partial Recursive Functions*. In *Theorem Proving in Higher Order Logics TPHOLs 2008*, LNCS 5170, pages 102–117, August 2008.
- A. Bove and V. Capretta. *Computation by Prophecy*. In *Typed Lambda Calculi and Applications TLCA'07*, LNCS 4583, pages 70–83. June 2007.
- A. Abel, M. Benke, A. Bove, J. Hughes, and U. Norell. *Verifying Haskell Programs using Constructive Type Theory*. In *Haskell Workshop*, ACM, September 2005.
- A. Bove and T. Coquand. *Formalising Bitonic Sort in Type Theory*. In *Types for Proofs and Programs International Workshop, TYPES 2004*, France, LNCS 3839, pages 82–97, December 2004.
- A. Bove and V. Capretta. *Recursive Functions with Higher Order Domains*. In *Typed Lambda Calculi and Applications TLCA'05*, LNCS 3461, pages 115–130. April 2005.

- *General Recursion in Type Theory*. In Types for Proofs and Programs, International Workshop TYPES 2002, LNCS 2646, pages 39–58, April 2002.

Tutorial paper on the method for defining general recursive algorithms in type theory described in my Ph.D. thesis.

- A. Bove and V. Capretta. *Nested General Recursion and Partiality in Type Theory*. In Theorem Proving in Higher Order Logics: 14th International Conference, TPHOLs 2001, LNCS 2152, pages 121–135, September 2001.

- A. Bove and P. Severi. *Alpha Conversion in Simply Typed Lambda Calculus*. In Workshop on Logic, Language, Information and Computation, WoLLIC’99, May 1999.

- A. Bove and A.D. Tasistro. *A machine-assisted Proof of the Subject Reduction Property for a Small Typed Functional Language*. In Workshop on Logic, Language, Information and Computation, WoLLIC’96, May 1996. Extended abstract.

This extended abstract is based on my Master’s thesis. A.D. Tasistro was my Master’s thesis supervisor.

- A. Bove and L. Arbillá. *A Confluent Calculus of Macro Expansion and Evaluation*. In Conference on LISP and Functional Programming, pages 278–287, ACM Press, June 1992.

Based on the technical report with the same name and by the same authors, and on my bachelor thesis.

## Lecture Notes

- A. Bove and P. Dybjer. *Dependent Types at Work*. Lecture notes for the *Language Engineering and Rigorous Software Development* International LerNet ALFA Summer School, Piriápolis, Uruguay, February 24 - March 1, 2008. LNCS 5520, pages 57–99, 2009.

## Invited Articles

- A. Bove, P. Dybjer, and U. Norell. *A Brief Overview of Agda – A Functional Language with Dependent Types*. Invited tutorial on the theorem prover Agda at Theorem Proving in Higher Order Logics TPHOLs 2009, 22nd International Conference. LNCS 5674, pages 73–78, August 2009.
- *Another Look at Function Domains*. Invited talk in the session on Mathematically Structured Functional Programming of the 25th Conference on Mathematical Foundations of Programming Semantics. ENTCS 249C, pages 61–74, April 2009.

## Theses

- *General Recursion in Type Theory*. PhD thesis, Department of Computing Science, Chalmers University of Technology, November 2002.

This thesis contains the following five papers:

- ★ *Simple General Recursion in Type Theory*;
  - ★ *Nested General Recursion and Partiality in Type Theory*, written together with V. Capretta;
  - ★ *Mutual General Recursion in Type Theory*;
  - ★ *Modelling General Recursion in Type Theory*, written together with V. Capretta (earlier version of the one published in *Mathematical Structures in Computer Science*);
  - ★ *Programming in Martin-Löf Type Theory: Unification - A non-trivial Example*.
- *Programming in Martin-Löf Type Theory: Unification - A non-trivial Example*. Licentiate Thesis, Department of Computer Science, Chalmers University of Technology, November 1999.
  - *A Machine-assisted Proof of the Subject Reduction Property for a Small Typed Functional Language*. Master's thesis, Instituto de Computación, Facultad de Ingeniería, Universidad de la República, Uruguay, November 1995. Technical report INCO-95-06.
  - *A Semantics of Syntactic Abbreviations using Explicit Substitution*. Bachelor thesis, December 1990. (In Spanish)