
Camilo Thorne

Research assistant

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Peruvian, born on January 8, 1975



Description and Interests

My current area of research is the computational complexity of controlled languages for description logic ontologies and ontology-based systems, but I am also interested and have expertise in:

- computational semantics
- logic in databases
- automated reasoning
- computational complexity
- first order logic
- description logics
- controlled languages
- type theory
- formal query languages

Education

Dec 05 ▷ **Mar 10** **PhD in Computer Science.** Free University of Bozen-Bolzano. Bolzano, Italy.

Focus: computational semantics of English, controlled languages, description logic ontologies, relational query languages, computational data complexity of query answering. Italian degree: “Dottorato di Ricerca in Informatica”. Language of instruction: English.

PhD dissertation: *Query Answering over Ontologies Using Controlled Natural Language*. Supervisors: Prof. Diego Calvanese and Prof. Raffaella Bernardi. Reviewers: Prof. Ian Pratt Hartmann and Prof. Carlos Areces.

Oct 01 ▷ **Sep 04** **MSc in Computer Science.** Université de Paris 1 Panthéon-Sorbonne/Université de Paris 13 Villetaneuse. Paris and Villetaneuse, France.

Focus: logic, knowledge representation, optimization, mathematical linguistics. French degrees: “Maîtrise de Logique” (Oct 01 – Jun 03) and “Diplôme d’Etudes Approfondies en Intelligence Artificielle et Optimization Combinatoire” (Sep 03 – Sep 04). Language of instruction: French.

MSc thesis: *Apprentissage de grammaires catégorielles de modules*. Supervisor: Prof. Denis Béchet.

Oct 00 ▷ **Jun 01** **BSc in Logic.** Université de Paris 1 Panthéon-Sorbonne. Paris, France.

Focus: logic, discrete mathematics, philosophy of mathematics. French degree: “Licence de Logique”. Language of instruction: French.

- Mar 92 ▷ Jun 97** **BA in Philosophy.** Pontificia Universidad Católica del Perú. Lima, Peru.
Focus: theoretical philosophy. Peruvian degree: “Bachiller en Humanidades”. Language of instruction: Spanish.
- Jan 89 ▷ Dec 91** **International Baccalaureate.** Newton College. Lima, Peru.
Languages of instruction: Spanish and English.

Research Experience

- Jan 09 ▷ pres** **Research assistant.** KRDB Research Centre for Knowledge and Data, Free University of Bozen-Bolzano. Bolzano, Italy.
Duties: I have been studying families of maximal tractable and minimal intractable (w.r.t. data complexity) controlled languages for data access using resolution. I have been also studying the semantics and computational properties of aggregate queries over description logic ontologies. Supervisor: Prof. Diego Calvanese and Prof. Enrico Franconi.
- Dec 05 ▷ Mar 10** **PhD candidate.** Faculty of Computer Science, Free University of Bozen-Bolzano. Bolzano, Italy.
Duties: I defined several controlled fragments of English that are in a one-to-one relationship with description logics and formal query languages for ontology-based data access, and studied the (semantic) data complexity of both the controlled languages and the description logics and query languages. The main goal was to understand whether controlled language interfaces to description logic and OWL ontologies scale to large amounts of data. Supervisors: Prof. Diego Calvanese and Prof. Raffaella Bernardi.
- Jul 05 ▷ Sep 05** **Intern.** Knowledge Media Institute (KMi), Open University. Milton Keynes, UK.
Duties: I worked on extending the KMi CORDER (COmmunity Relation Discovery by named Entity Recognition) algorithm, to extract domain ontologies using hierarchical clustering. A JAVA prototype was developed. Supervisors: Dr. Victoria Uren and Dr. Jianhan Zhu.
- Mar 05 ▷ May 05** **Intern.** CNR (Consiglio Nazionale della Ricerca)/Laboratory of Applied Ontology (LOA)/University of Trento. Trento, Italy.
Duties: I did a state of the art on foundational ontologies for agents, with the aim of integrating them in the LOA’s DOLCE foundational ontology. Supervisor: Dr. Claudio Masolo.
- Apr 04 ▷ Sep 04** **Intern.** CNRS (Centre National de la Recherche Scientifique)/Laboratoire d’Informatique de Paris Nord (LIPN). Villetaneuse, France.
Duties: I defined a class of type-theoretical grammars based on linear logic, categorical module grammars, and studied their learnability in Gold’s model. I showed that categorical module grammars of bounded finite size are learnable in such model. A small LISP parser was developed. Supervisor: Prof. Denis B chet.

Projects

- Feb 11** ▷ **pres** **Foundations of KRDB (Internal)**. KRDB Reasearch Centre for Knowledge and Data, Bolzano, Italy.
- Investigator. Project leader: Prof. Diego Calvanese. Duties: I have been studying the data complexity of several classical fragments of first order logic (Ackermann class, Bernays class, Monadic class, Gödel class). Also, I have been investigating on methods to empirically evaluate the data complexity of controlled languages using resolution-based theorem provers.
- Jun 10** ▷ **pres** **NET²: A Network for Enabling Networked Knowledge (FP7-247601)**. KRDB Reasearch Centre for Knowledge and Data, Bolzano, Italy.
- Investigator. Principal investigator (at FUB): Prof. E. Franconi. Project leader (at DERI): Prof. Axel Polleres and Prof. Paul Buitelaar. Duties: I prepared a tutorial on controlled language interfaces to description logic ontologies at the University of Chile. I have also done some coordination regarding the hosting and arrival of FUB investigators to the University of Chile. Project partners: FUB (Italy), University of Chile and Pontifical University of Chile (Chile), Meraka Institute (South Africa), DERI (Ireland), TU Vienna (Austria), TU Delft (Netherlands), Koblenz University (Germany), Pontifical University of Rio (Brazil), Shanghai Jiao Tong University (China).
- Jan 10** ▷ **Jan 11** **KRDB Technologies (Internal)**. KRDB Reasearch Centre for Knowledge and Data, Bolzano, Italy.
- Investigator. Project leader: Prof. Enrico Franconi. Duties: I studied the data complexity of satisfiability and query answering of Pratt-Hartmann's controlled fragments of English using resolution decision procedures. This lead also to study the data complexity of several classical fragments of first order logic.
- Mar 09** ▷ **Apr 09** **Syllogistic Fragments of English (Internal)**. KRDB Reasearch Centre for Knowledge and Data, Bolzano, Italy.
- Investigator. Project leader: Prof. Diego Calvanese. Duties: I studied the data complexity of several controlled fragments of English expressing common-sense syllogistic reasoning.
- Jan 09** ▷ **Jan 10** **Query con Aggregazione su Ontologie per l'accesso a Servizi (Internal)**. KRDB Reasearch Centre for Knowledge and Data, Bolzano, Italy.
- Investigator. Project leader: Prof. Diego Calvanese. Duties: I studied the semantics and the data complexity of answering queries containing SQL aggregation operators (e.g., **sum**-, **count**-, **min**- and **max**-queries) over description logic ontologies and knowledge bases (in particular, data-driven ontologies).
- Jul 05** ▷ **Sep 05** **CORDER (Internal)**. KMi, Milton Keynes, UK.
- Collaborator. Principal Investigators: J. Zhu and Victoria Uren. Duties: I worked on extending the CORDER relation extraction algorithm into a taxonomy extraction algorithm.

Teaching and Academic Experience

- Mar 11** ▷ **pres** **Teaching assistant.** Faculty of Computer Science, Free University of Bozen-Bolzano. Bolzano, Italy.
I taught the lab of the 2010-2012 European Masters Program in Computational Logic (EMCL) in computational logic.
- Nov 10** **Admissions evaluator.** Faculty of Computer Science, Free University of Bozen-Bolzano. Bolzano, Italy.
I was in charge of evaluating and ranking the ERASMUS MUNDUS overseas grant applicants of the 2011-2013 European Masters Program in Language and Communication Technologies.
- Feb 07** ▷ **Feb 09** **Student representative.** Free University of Bozen-Bolzano. Bolzano, Italy.
I represented the computer science PhD students in the university senate. Several proposals regarding their status (tuition fees exemption, increase of PhD stipend) were made.
- Feb 00** ▷ **Jul 00** **Contract lecturer.** Faculty of Engineering, Universidad Privada Ricardo Palma. Lima, Peru.
I taught a first-year BSc course in logic and epistemology.

Grants

- Apr 11** ▷ **May 11** **TiLPS** visiting fellowship.
- Dec 05** ▷ **Nov 08** **Bolzano University** PhD fellowship.
- Jul 05** ▷ **Sep 05** **KMi** internship grant.
- Mar 05** ▷ **Jun 05** **University of Trento** internship grant.
- Apr 04** ▷ **Nov 04** **CNRS** internship grant.

Skills and Interests

- Languages** Spanish (native), English (fluent), French (fluent), Italian (good), German (basic), Latin (basic).
- Programming** JAVA (web programming), Prolog, LISP, Python, CAML, UNIX environments, experience with relational databases (mainly with PostgreSQL), MS Office.
- Other** Creative writing, jogging, swimming, trekking.

Presentations, Seminars, Tutorials

- 2011** “Data-scalable Controlled Languages”. SRI International invited talk. Menlo Park, USA.

- “Querying the Fragments of English”. WoLLIC 2011 workshop. Philadelphia, USA.
- “Semantic Complexity of Controlled Languages”. TiLPS seminar series on logic and language. Tilburg, Netherlands.
- 2010** “Description Logics and Controlled English Fragments for Data Access”. NET² tutorial. Santiago de Chile, Chile.
- “Query Answering over Ontologies using Controlled Languages”. PhD defense presentation. Bolzano, Italy.
- 2009** “The Data Complexity of the Syllogistic Fragments of English”. AC 2009 colloquium. Amsterdam, Netherlands.
- “Aggregate Queries over Ontologies”. KRDB lunch seminar. Bolzano, Italy.
- “Tree Shaped Aggregate Questions over Ontologies”. FQAS 2009 conference. Roskilde, Denmark.
- “Exploring Controlled English Ontology-Based Data Access”. CNL 2009 workshop. Marettimo, Italy.
- 2008** “Expressing DL-Lite Query Answering with Controlled English”. KRDB lunch seminar. Bolzano, Italy.
- “Aggregate Queries over Ontologies”. ONISW 2008 workshop. Napa, USA.
- “Expressing Formal Queries Over DL-Lite Ontologies with Controlled English”. 2008 ESSLLI Student Session. Hamburg, Germany.
- “Expressing Formal Queries Over DL-Lite Ontologies with Controlled English”. Bolzano Language and Communication Technologies (LCT) Student Day. Bolzano, Italy.
- 2007** “Expressing DL-Lite Ontologies with Controlled English”. DL 2007 workshop. Bressanone, Italy.
- “Expressing DL-Lite Ontologies with Controlled English”. KRDB PhD students’ workshop. Bolzano, Italy.
- 2005** “The BDI Model of Agency and BDI Logics”. LOA talk. Trento, Italy.

Research Visits

- Apr 11** ▷ **May 11** Visited the Tilburg Center for Logic and Philosophy of Science (TiLPS) of Tilburg University, Tilburg, Netherlands.
- Sep 10** Visited the computer science department of the University of Chile (FP7 NET² academic exchange project), Santiago, Chile.

Summer Schools

- 2009** Attended the 2009 Reasoning Web Summer School at the Free University of Bozen-Bolzano, Bressanone, Italy.

- 2008** Attended the 2008 Reasoning Web Summer School at Ca' Foscari University Venice, Italy.
Attended the 20th European Summer School in Logic, Language and Computation (ESSLLI 2008) at the University of Hamburg, Hamburg, Germany.
- 2007** Attended the 2007 Reasoning Web Summer School at Dresden University Dresden, Germany.
- 2006** Attended the 18th European Summer School in Logic, Language and Computation (ESSLLI 2006) at the University of Málaga, Málaga, Spain.

References

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List of Publications

Books

- 2010** Camilo Thorne. “Query Answering over Ontologies Using Controlled Natural Languages”. 2010, KRDB Dissertation Series, Bolzano, Italy.

Journals

- 2011** Camilo Thorne, Diego Calvanese. “Tractability and Intractability of Controlled Languages for Data Access”, 2011, *Studia Logica* Special Issue on Logic and Language.

Conferences

- 2009** Camilo Thorne, Diego Calvanese. “Tree Shaped Aggregate Questions over Ontologies”. 2009, Proceedings of the FQAS 2009 conference (Roskilde, Denmark).
- 2007** Raffaella Bernardi, Francesca Bonin, Diego Calvanese, Domenico Carbotta, Camilo Thorne. “English Querying over Ontologies: E-QuOnto. 2007, Proceedings of the AI*IA 2007 conference (Rome, Italy).
- Camilo Thorne. “Categorial Module Grammars Have Finite Bounded Density”. 2007, Proceedings of the LATA 2007 conference (Tarragona, Spain).
- 2000** Camilo Thorne. “Sobre el imperativo categórico como regla de universalización”. 2000, Proceedings of the 7th Peruvian congress of philosophy (Lima, Peru).

Workshops

- 2011** Camilo Thorne. “Querying the Fragments of English”. 2011, Proceedings of the WoLLIC 2011 workshop (Philadelphia, USA).
- 2010** Camilo Thorne, Diego Calvanese. “The Data Complexity of the Syllogistic Fragments of English”. 2010, Proceedings of the AC 2009 colloquium (Amsterdam, Netherlands).
- Camilo Thorne, Diego Calvanese. “Controlled English Ontology-Based Data Access”. 2010, Proceedings of the CNL 2009 workshop (Marettimo, Italy).
- 2009** Camilo Thorne, Diego Calvanese. “Exploring Controlled English Ontology-Based Data Access” (extended abstract). 2009, Pre-Proceedings of the CNL 2009 workshop (Marettimo, Italy).

- 2008** Diego Calvanese, Evgeny Kharlamov, Werner Nutt, Camilo Thorne. “Aggregate Queries over Ontologies”. 2008, Proceedings of the ONISW 2008 workshop (Napa Valley, USA).
Camilo Thorne. “Expressing Conjunctive and Aggregate Queries over Ontologies with Controlled English”. 2008, Proceedings of the ESSLLI 2008 student session (Hamburg, Germany).
- 2007** Camilo Thorne. “Managing Structured Data with Controlled English - An Approach based on Description Logics”. 2007, Proceedings of the ESSLLI 2007 student session (Dublin, Ireland).
Raffaella Bernardi, Diego Calvanese, Camilo Thorne. “Expressing DL-Lite Ontologies with Controlled English”. 2007, Proceedings of the DL 2007 workshop (Bressanone, Italy).
Raffaella Bernardi, Diego Calvanese, Camilo Thorne. “Lite Natural Language”. 2007, Proceedings of the IWCS-7 workshop (Tilburg, Netherlands).

Thesis

- 2010 - PhD** Query Answering over Ontologies Using Controlled Natural Languages. 2010, Free University of Bozen-Bolzano, Italy.
- 2004 - MSc** Apprentissage de grammaires catégorielles de modules. 2004, Université de Paris 13, France.

Reports

- 2008** Camilo Thorne. “Equivalence of Aggregate Queries with Incomplete Information and Dependencies”. 2008, KRDB Report.
- 2007** Camilo Thorne. “Controlled English for DL-Lite”. 2007, KRDB Report.
- 2005** Camilo Thorne, Victoria Uren, Jianhan Zhu. “Extracting Domain Ontologies with CORDER”. 2005, KMi Report.