

# Carmen S. Chui

Bahen Centre for Information Technology (Room 8120)  
University of Toronto, Toronto, Ontario M5S 3G8 – Canada  
☎ +1 (416) 946 3216 • ✉ [cchui@mie.utoronto.ca](mailto:cchui@mie.utoronto.ca) • in [carmenchui](#)  
ORCID: [0000-0001-9493-5912](https://orcid.org/0000-0001-9493-5912) • 🌐 [carmenchui.github.io](https://carmenchui.github.io)

---

## Research Interests

---

- Ontology design, mapping, integration, and verification
- Knowledge representation & modelling
- Automated reasoning of first-order ontologies
- Applications of ontologies to data and knowledge integration
- Engineering education

---

## Education

---

**Ph.D. in Industrial Engineering** **09/2013–present**  
*University of Toronto* Toronto, Canada

- Dissertation: “A Molecular Structure Ontology for Medicinal Chemistry”
- Adviser: [Michael Grüninger](#)
- Committee: [Mark Fox](#), [Michael Grüninger](#), [L.H. Shu](#)
- Currently enrolled in the [Prospective Professors in Training \(PPIT\) Program](#)

**M.A.Sc. in Industrial Engineering** **09/2011–08/2013**  
*University of Toronto* Toronto, Canada

- Dissertation: “Axiomatized Relationships Between Ontologies”
- Adviser: [Michael Grüninger](#)
- Committee: [Mark Fox](#), [Michael Grüninger](#), [L.H. Shu](#)
- Received [Teaching Fundamentals \(TF\) Certificate](#) from the Teaching Assistants’ Training Program (TATP) in 2012

**B.A.Sc. (with honours) in Industrial Engineering** **09/2007–06/2011**  
*University of Toronto* Toronto, Canada

- Information Systems option stream
- Fourth year research thesis: “Reasoning About Changes”

---

## Publications

---

### Identifiers

- Google Scholar page: <https://scholar.google.ca/citations?hl=en&user=R1gx074AAAAJ>
- DBLP page: <http://dblp2.uni-trier.de/pers/hd/c/Chui:Carmen>

### **Peer-Reviewed Conference Proceedings (Full Papers)**

In knowledge representation and computer science, full paper contributions are subjected to *anonymous and external peer-review*; where applicable, acceptance rates are listed in each entry.

- [C1] **Chui, C.**, Grüninger, M., “A Molecular Structure Ontology for Medicinal Chemistry”. In: *Formal Ontology in Information Systems - Proceedings of the 9th International Conference, FOIS 2016, Annecy, France, July 6-9, 2016*. Acceptance Rate: 30.9% (25 papers of 80 submissions). 2016, pp. 285–298. URL: <http://dx.doi.org/10.3233/978-1-61499-660-6-285>.
- [C2] **Chui, C.**, Grüninger, M., “Mathematical Foundations for Participation Ontologies”. In: *Formal Ontology in Information Systems - Proceedings of the Eighth International Conference, FOIS 2014, September, 22-25, 2014, Rio de Janeiro, Brazil*. Acceptance Rate: 29.6% (24 papers of 81 submissions). 2014, pp. 105–118. URL: <http://dx.doi.org/10.3233/978-1-61499-438-1-105>.
- [C3] **Chui, C.**, Grüninger, M., “Merging the DOLCE and PSL Upper Ontologies”. In: *KEOD 2014 - Proceedings of the International Conference on Knowledge Engineering and Ontology Development, Rome, Italy, 21-24 October, 2014*. Acceptance Rate: 18% (78 submissions). An updated and revised version of this paper appears in [B1]. **Nominated for Best Student Paper award**. SciTePress, 2014, pp. 16–26. ISBN: 978-989-758-049-9. URL: <https://doi.org/10.5220/0005027100160026>.
- [C4] Grüninger, M., Hahmann, T., Katsumi, M., **Chui, C.**, “A Sideways Look at Upper Ontologies”. In: *Formal Ontology in Information Systems - Proceedings of the Eighth International Conference, FOIS 2014, September, 22-25, 2014, Rio de Janeiro, Brazil*. Acceptance Rate: 29.6% (24 papers of 81 submissions). 2014, pp. 9–22. URL: <https://doi.org/10.3233/978-1-61499-438-1-9>.

### **Peer-Reviewed Workshop Proceedings (Full Papers)**

- [W1] **Chui, C.**, Grüninger, M., “Verification and Modularization of the DOLCE Upper Ontology”. In: *Proceedings of the Joint Ontology Workshops 2017 Episode 3: The Tyrolean Autumn of Ontology, Bozen-Bolzano, Italy, September 21-23, 2017*. Sept. 2017. URL: [http://ceur-ws.org/Vol-2050/FOUST\\_paper\\_1.pdf](http://ceur-ws.org/Vol-2050/FOUST_paper_1.pdf).
- [W2] Grüninger, M., **Chui, C.**, Katsumi, M., “Upper Ontologies in COLORE”. In: *Proceedings of the Joint Ontology Workshops 2017 Episode 3: The Tyrolean Autumn of Ontology, Bozen-Bolzano, Italy, September 21-23, 2017*. Sept. 2017. URL: [http://ceur-ws.org/Vol-2050/FOUST\\_paper\\_2.pdf](http://ceur-ws.org/Vol-2050/FOUST_paper_2.pdf).
- [W3] Aameri, B., Grüninger, M., **Chui, C.**, “Anti-Modules”. In: *Proceedings of the Joint Ontology Workshops 2016 Episode 2: The French Summer of Ontology co-located with the 9th International Conference on Formal Ontology in Information Systems (FOIS 2016)*. Annecy, France, July 2016. URL: <http://ceur-ws.org/Vol-1660/womocoe-paper2.pdf>.
- [W4] **Chui, C.**, Grüninger, M., van Berkel, M., “Ontology Mapping in an e-Commerce Application”. In: *Formal Ontologies Meet Industry - 7th International Workshop, FOMI 2015, Berlin, Germany, August 5, 2015, Proceedings*. Acceptance Rate: 61.1% (11 papers of 18 submissions). 2015, pp. 25–38. URL: [https://doi.org/10.1007/978-3-319-21545-7\\_3](https://doi.org/10.1007/978-3-319-21545-7_3).

## Book Chapters

- [B1] **Chui, C.**, Grüninger, M., “Techniques for Merging Upper Ontologies”. In: *Knowledge Discovery, Knowledge Engineering and Knowledge Management - 6th International Joint Conference, IC3K 2014, Rome, Italy, October 21-24, 2014, Revised Selected Papers*. 2014, pp. 273–292. URL: [https://doi.org/10.1007/978-3-319-25840-9\\_18](https://doi.org/10.1007/978-3-319-25840-9_18).

## Prepared Manuscripts

- [M1] **Chui, C.**, Grüninger, M., “Drug Discovery as Model Construction”. To be submitted to the [International Conference on Automated Deduction \(CADE 2018\)](#).

## Scholarly Presentations & Talks

- [S1] *An Ontological Approach to Medicinal Chemistry*. Presented to The Lautens Group in the Department of Chemistry at the University of Toronto. July 2017.
- [S2] *A Molecular Structure Ontology for Medicinal Chemistry*. Presented [C1] at the Formal Ontology in Information Systems (FOIS 2016) in Annecy, France. July 2016.
- [S3] *Anti-Modules*. Presented [W3] at the Proceedings of the Joint Ontology Workshops (JOWO 2016). July 2016.
- [S4] *Merging the DOLCE and PSL Upper Ontologies*. Presented [C3] at the Proceedings of the International Conference on Knowledge Engineering and Ontology Development (KEOD 2014). Oct. 2014.
- [S5] *Breaking Down DOLCE: Overview of the Verification of the DOLCE Ontology*. Presented at the Toronto Ontology Festival (TOFFEE). Aug. 2012.
- [S6] *Overview of Current Research Projects*. Presented at the [Toronto Semantic Web Meetup Group: What’s Happening in the Semantic Technologies Lab?](#) Event. Oct. 2012.
- [S7] *Reasoning with Ontology Mappings*. Presented at the MIE Scientific Writing Course (run by Debby Repka). July 2012.

---

## Teaching and Mentoring Experience

---

**University of Toronto**  
*Teaching Assistant*

**09/2011–present**  
*Toronto, Canada*

In addition to invigilating faculty-wide exams, I designed and conducted tutorials, held office hours, graded progress and final reports, and designed programming labs and quizzes, and graded assignments, tests, and exams.

At the *undergraduate* level:

- MIE191: Introduction to Mechanical and Industrial Engineering Winter 2015–2017
  - Taught by [Professor Pierre Sullivan](#)
- MIE350: Design & Analysis of Information Systems Fall 2011–2017
  - Taught by Professors [Reza Samavi](#) (Fall 2011) and [Michael Grüninger](#) (Fall 2012 onwards)
- MIE457: Knowledge Modelling & Management Winter 2015–2018
  - Taught by [Professor Michael Grüninger](#)

At the *graduate* level:

- MIE1505: Enterprise Modelling Fall 2016
  - Taught by [Professor Michael Grüninger](#)

## University of Toronto

01/2017–04/2017

*Client/Student Mentor*

*Toronto, Canada*

As part of the APS 1203/1204 course offered with the Prospective Professors in Training (PPIT) program, I was a mentor for a group of six first-year undergraduate students taking their Engineering Strategies & Practice II (APS 112) course. The group's project is to redesign mathematics in the classroom to make the subject more engaging and interesting for high-school students. We have been featured in the UofT Engineering News in the following article: <http://news.engineering.utoronto.ca/engineering-educational-experience/>.

---

## Research and Industry Experience

---

### Graduate Research Assistant

09/2011–present

*Semantic Technologies Lab, University of Toronto*

*Toronto, Canada*

- Help specify the metadata and formalize logical methods to relate ontologies to one another within the [COMmon Logic Ontology REpository \(COLORE\)](#) project
- Assisted with *local* International Association for Ontology & Its Application (IAOA) events:
  - [IAOA Summer Institute on Upper Ontologies 2017](#)
  - [Toronto Ontology Festival \(TOFFEE\) 2012](#)

### Database Analyst

05/2010–08/2010

*Mercer (Canada) Ltd.*

*Toronto, Canada*

### Web Application Support Specialist, Database Analyst

05/2009–08/2009

*Mercer (Canada) Ltd.*

*Toronto, Canada*

**Web Application Support Specialist**  
*Mercer (Canada) Ltd.*

**05/2008–08/2008**  
*Toronto, Canada*

---

## Grants, Awards, and Scholarships

---

<i>UofT Doctoral Completion Award (\$3,000.00)</i>	October 2017
<i>Department of Mechanical &amp; Industrial Engineering Fellowship (totalling \$48,861.00)</i>	2011–present
<i>Graduate Student Endowment Fund, Faculty of Applied Science &amp; Engineering (\$20,000)</i>	2014
<i>Nominated for Best Student Paper award at KEOD 2014</i>	2014
<i>Mechanical And Industrial Engineering Admission Scholarship (\$1,000)</i>	2007
<i>Faculty Of Applied Science And Engineering Admission Scholarship (\$1,000)</i>	2007

---

## Professional Activities & Associations

---

<i>Student Member, <a href="#">International Association for Ontology &amp; Its Applications (IAOA)</a></i>	2011–present
<i>Student Member, <a href="#">ONTOLOG Forum</a></i>	2011–present
<i>Graduate Student Member, <a href="#">Ontario Society of Professional Engineers (OSPE)</a></i>	2011–present
<i>Graduate Student Member, <a href="#">Institute of Electrical and Electronics Engineers (IEEE)</a></i>	2011–present
<i>Graduate Student Member, <a href="#">Institute of Industrial Engineers (IIE)</a></i>	2011–present

---

## Personal

---

**Languages:** English (native), French (limited working proficiency)

**Citizenship:** Canadian

Last updated: *February 18, 2018*