

## Claudia Schulz

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### Education

#### **Ph.D. in Computing Imperial College London, UK (2012 – present)**

*Ph.D. Thesis:* Developments in Abstract and Assumption-Based Argumentation and their Application in Logic Programming

*Supervisors:* Prof. Francesca Toni and Prof. Marek Sergot

*Funding:* 4-year Teaching Scholarship (3 years research + 1 year non-consecutive teaching activities)

*Expected date of completion:* March 2017

*Major Achievements:*

- I have 10 peer-reviewed scientific publications, and won both a Best Paper and a Best Student Paper award. I have also (co-) authored 7 magazine articles.
- I co-developed 2 web platforms.
- I won awards for academic excellence (both for papers and talks), outstanding teaching, and professional commitment.
- I gave 4 invited talks.
- I attended 14 discipline-specific conferences and workshops, 5 summer schools and doctoral consortiums, and 8 interdisciplinary workshops including the prestigious Heidelberg Laureate Forum and the Rising Stars in EECS at MIT.
- I taught in 7 courses for undergraduate, M.Sc., and M.Res. students and supervised 5 students (M.Sc., M.Eng., B.Eng., 2<sup>nd</sup> year).
- I served as the Chair of the Imperial College ACM Student Chapter and have been a Ph.D. representative for 3 consecutive years.
- I was the organiser of various seminars and events and co-organiser of 4 workshops.
- I served as a PC member of 7 international conferences and 4 workshops, and as a reviewer for 6 journals including Artificial Intelligence.

#### **Postgraduate Certificated in University Learning and Teaching (PG Cert ULT) Imperial College London, UK (2013-2015)**

*Courses:* Educational Supervision, Assessment and Feedback, Research and Teaching, Communicating Knowledge, Educational Design, Public Engagement, Introduction to Personal Tutoring, Introduction to Teaching for Learning

#### **M.Sc. in Computing (Artificial Intelligence) Imperial College London, UK (2011-2012)**

*Degree Classification:* Distinction (overall degree mark: 81.4)

*M.Sc. Thesis:* Argumentation-Based Answer Set Justification

*Courses:* Knowledge Representation, Automated Reasoning, Ontologies and the Semantic Web, Machine Learning, Intelligent Data and Probabilistic Inference, Multi-Agent Systems, Modal and Temporal Logic, Prolog Programming

#### **B.Sc. in Cognitive Science Osnabrück University, Germany (2008-2011)**

*Degree Classification:* Excellent (A) with Distinction

*B.Sc. Thesis:* How to deal with Ontologies in an Anchoring Framework

*Modules:* Artificial Intelligence, Neuroinformatics, Neuroscience, Cognitive Psychology, Computer Science, Computational Linguistics, Mathematics, Philosophy of Mind and Cognition

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## Research Internships and Work Experience

### **Consultant for Knowledge Representation and Reasoning Emotech Ltd**, UK (since November 2016)

Working on “Olly”, the robot with personality and a 2017 CES Innovation Awards Honouree in 4 categories.

### **Subject Matter Specialist for Artificial Intelligence and Machine Learning Outsmart Insights Ltd**, UK (since June 2016)

Contributor to “Technology Watch” workshops with BAE Systems: *prepare* and *present* cutting-edge research and start-up technology, *discuss* the presented topics and *brainstorm* future developments. Part of a team mapping the Machine Learning landscape.

### **Department Editor ACM Crossroads Magazine** (August 2014 – August 2015)

Responsible for the “Updates” section about ACM Student Chapters around the world, resulting in 5 magazine articles (see Publications [16-20]).

### **Research Intern National Institute of Informatics (NII)**, Tokyo, Japan (March – July 2014)

I won a scholarship from NII to visit Prof. Ken Satoh for 3 months, working on logic programming and argumentation approaches to legal reasoning with a focus on classifying and explaining inconsistent information (resulting in a publication [4]). I also collaborated with Prof. Randy Goebel.

### **Invited Researcher Universidad Politécnica de Madrid**, Spain (September 2013)

I was invited by Prof. David Pearce for a 1-week paid research visit to collaborate on the semantic correspondence of Assumption-Based Argumentation, Logic Programming, and Equilibrium Logic.

### **Research Intern Institute of Molecular Biology and Genetics (IBGM)**, Valladolid, Spain (September – December 2010)

In the research group of Prof. Carlos Villalobos and Prof. Lucía Núñez, working on neuroprotection for Alzheimer’s disease.

### **Research Assistant Institute of Cognitive Mathematics, Osnabrück University**, Germany (July 2009 – April 2010)

In the research group of Prof. Elmar Cohors-Fresenborg, working on new methods to teach mathematics in primary school.

## Publications

### **Journals**

- [1] C. Schulz and F. Toni: Justifying Answer Sets using Argumentation. *Theory and Practice of Logic Programming* 16(1): 59-110 (2016)  
<http://dx.doi.org/10.1017/S1471068414000702>

### **Published Conference Proceedings**

- [2] C. Schulz and D. Dumitrache: The ArgTeach Web-Platform. *COMMA 2016*
- [3] C. Schulz and F. Toni: Logic Programming in Assumption-Based Argumentation Revisited - Semantics and Graphical Representation. *AAAI 2015*  
<http://www.aaai.org/ocs/index.php/AAAI/AAAI15/paper/view/9827/9434>
- [4] C. Schulz, K. Satoh, F. Toni: Characterising and Explaining Inconsistency in Logic Programs. *LPNMR 2015*  
[http://link.springer.com/chapter/10.1007%2F978-3-319-23264-5\\_39](http://link.springer.com/chapter/10.1007%2F978-3-319-23264-5_39)

- [5] J. Dauphin and C. Schulz: ArgTeach – A learning tool for Argumentation Theory. ICTAI 2014  
<http://ieeexplore.ieee.org/document/6984556/?arnumber=6984556>

**Ramamoorthy Best Paper Award and Best Student Paper Award**

- [6] C. Schulz and F. Toni: Complete Assumption Labellings. COMMA 2014  
<http://ebooks.iospress.nl/publication/37809>

- [7] C. Schulz and F. Toni: ABA-Based Answer Set Justification. ICLP 2013

### Workshops

- [8] C. Schulz: On Stable Labellings and Odd-Length Cycles in Abstract Argumentation Frameworks. Cardiff Argumentation Forum 2016

- [9] M. Caminada and C. Schulz: On the Equivalence between Assumption-Based Argumentation and Logic Programming. ArgLP 2015

- [10] C. Schulz, M. Sergot, F. Toni: Argumentation-Based Answer Set Justification. Commonsense 2013

### Published Research Abstracts

- [11] C. Schulz: Explaining Answer Set Programming in Argumentative Terms. AAAI 2015 (Doctoral Consortium)

- [12] C. Schulz: Graphical Representation of Assumption-Based Argumentation. AAAI 2015 (Student Poster Abstract) **Best Student 3-Minute Presentation**

- [13] C. Schulz: Argumentation for Answer Set Programming and other Nonmonotonic Reasoning Systems. ICLP 2013 (Doctoral Consortium) **Best Paper Award** at the Doctoral Consortium

### Magazines

- [14] C. Schulz and F. Toni: Encoding Logic Programs in Assumption-Based Argumentation. Association for Logic Programming Newsletter, Vol.28, No.3 (2015)  
<http://www.cs.nmsu.edu/ALP/2015/09/encoding-logic-programs-in-assumption-based-argumentation/>

- [15] M.J. Barrett, B.P. Lim, C. Schulz, G. Sharon: Student Travel Award Recipients for the 2015 AAAI/SIGAI Doctoral Consortium. AI Matters 1(4):36-37 (2015)

- [16] C. Schulz: Excellence around the world. ACM Crossroads 22(1): 12-13 (2015)

- [17] C. Schulz: A community for learning. ACM Crossroads 21(4): 12-13 (2015)

- [18] C. Schulz: ACM-W chapters at home and abroad: An initiative on women, not of women. ACM Crossroads 21(3): 10-11 (2015)

- [19] C. Schulz: Staying in touch: How print and digital media can further student chapter outreach. ACM Crossroads 21(2): 10-11 (2014)

- [20] C. Schulz: From zero to excellence. ACM Crossroads 21(1): 10 (2014)

(see my website to download the ACM Crossroads articles)

### Software

- [21] *ArgTeach* ([www-argteach.doc.ic.ac.uk](http://www-argteach.doc.ic.ac.uk)) [2]: web platform for learning how to find complete labellings in abstract argumentation, based on the work by Dragos Dumitrache (research project)

- [22] *LABAS Justification* ([labas-justification.herokuapp.com](http://labas-justification.herokuapp.com)): constructs graphical justifications of answer sets as described in [1], vaguely based on the work by Ivan Podgurskiy (M.Eng. project)

## Awards

### **ACM UPE Student Chapter Scholarship Award (March 2016)**

*Executive Council of Upsilon Pi Epsilon (UPE) and Association for Computing Machinery (ACM)*  
 (For academic excellence and professional commitment to the computing and information technology field.)

### **Best Graduate Teaching Assistant Award (May 2015)**

*Imperial College Student Academic Choice Awards*

**Google Prize for Excellence, 2nd Runner-up (March 2015)**

*Google 2015 Poster and Demo Competition, Imperial College London*

**Best Student 3-Minute Presentation (January 2015)** for presenting [14]

*29th AAAI Conference on Artificial Intelligence (AAAI 2015)*

**SIGAI Student Travel Award (January 2015)**

*ACM Special Interest Group on Artificial Intelligence (SIGAI)*

(to attend the 2015 AAAI/SIGAI Doctoral Consortium)

**Ramamoorthy Best Paper Award (November 2014)** for [7]

*26th IEEE International Conference on Tools with Artificial Intelligence (ICTAI 2014)*

**Best Student Paper Award (November 2014)** for [7]

*26th IEEE International Conference on Tools with Artificial Intelligence (ICTAI 2014)*

**AISB Student Travel Award (September 2014)**

*The Society for the Study of Artificial Intelligence and Simulation of Behaviour*

(to attend the Summer School on Argumentation 2014)

**Best Paper Award (August 2013)** for [15]

*Doctoral Consortium of the 29<sup>th</sup> International Conference on Logic Programming (ICLP 2013)*

**Winning team of the 20<sup>th</sup> Prolog Programming Contest (August 2013)**

**Corporate Partnership Programme Award for Academic Excellence (May 2013)**

*Department of Computing, Imperial College London*

**Teaching Scholarship (June 2012)**

*Department of Computing, Imperial College London*

**Best Graduate (February 2012)**

*Institute of Cognitive Science, Osnabrück University*

## Talks and Presentations

### Invited Talks

- **What Argumentation can do for AI** (November 2016)  
Student Seminars, Imperial College London ACM Student Chapter, UK
- **Rules & Arguments - Argumentation for Logic Programming** (January 2016)  
Computer Science Department, Heinrich-Heine-Universität Düsseldorf, Germany
- **Explaining Answer Sets using Argumentation Theory** (November 2014)  
International Center for Computational Logic, TU Dresden, Germany
- **Yes - No - Yes - No - Yes... Is this how Argumentation works?** (October 2013)  
Student Seminars, Imperial College London ACM Student Chapter, UK
- **Argumentation-Based Answer Set Justification** (January 2013)  
Agents and Intelligent Systems Group, King's College London, UK

### Conference Talks

- 13<sup>th</sup> International Conference on Logic Programming and Non-Monotonic Reasoning (LPNMR), September 2015: presenting [6], **Student Travel Grant**
- 29<sup>th</sup> AAAI Conference on Artificial Intelligence (AAAI), January 2015: presenting [5]
- 29<sup>th</sup> AAAI Conference on Artificial Intelligence (AAAI), January 2015: presenting [14], **Best Student 3-Minute Presentation**

- 26<sup>th</sup> IEEE International Conference on Tools with Artificial Intelligence (ICTAI), November 2014: presenting [7]
- 5<sup>th</sup> International Conference on Computational Argument (COMMA), September 2014: presenting [8], **Student Travel Grant**
- 29<sup>th</sup> International Conference on Logic Programming (ICLP), August 2013: presenting [9], **Student Travel Grant**

### Workshop Talks

- Cardiff Argumentation Forum (CAF), July 2016: presenting [10]
- 1<sup>st</sup> International Workshop on Argumentation and Logic Programming (ArgLP), August 2015: presenting [11]
- 2<sup>nd</sup> Workshop on Logic Reasoning and Computation (LRC), February 2015: Talk on “Explaining Answer Sets in Argumentative Terms”, **Invited Participant** including **Student Travel Grant**
- 11th International Symposium on Logical Formalizations of Commonsense Reasoning (Commonsense), May 2013: presenting [12], **Student Travel Grant**

### Talks at Summer Schools & Doctoral Consortiums & Interdisciplinary Workshops

- 20<sup>th</sup> AAI/SIGAI Doctoral Consortium, January 2015: presenting [13], **SIGAI Student Travel Grant**
- Summer School on Argumentation, September 2014: Student Talk
- ACM Europe 2<sup>nd</sup> Chapter Workshop, September 2014: Talk, Co-Representative of the Imperial College London ACM Student Chapter
- 9<sup>th</sup> ICLP Doctoral Consortium, August 2013: presenting [15]

### Poster Presentations & System Demonstrations

- 6<sup>th</sup> International Conference on Computational Argument (COMMA), September 2016: System Demonstration [4]
- 29<sup>th</sup> AAI Conference on Artificial Intelligence (AAAI), January 2015: Poster [14]
- 20<sup>th</sup> AAI/SIGAI Doctoral Consortium, January 2015: Poster [13]
- Rising Stars in EECS at MIT, November 2015: Poster, **Selected Participant**
- 1<sup>st</sup> ACM-W UK Inspire Celebration of Women in Computing, October 2015: Poster
- 3<sup>rd</sup> Heidelberg Laureate Forum, August 2015: Poster, **Selected Participant**
- ACAI Summer School, July 2013: Poster

## Teaching

I became a **Fellow of the Higher Education Academy** (HEA) in August 2015.

I hold a **Postgraduate Certificate in University Teaching and Learning** (PG Cert ULT) from Imperial College London (since July 2015).

I was chosen Imperial College’s **Best Graduate Teaching Assistant** 2014/15.

I was awarded a **Teaching Scholarship** to support my Ph.D. (October 2012 – March 2017).

### Taught courses

- **Academic Writing** (M.Res.): course leader, autumn 2015 – spring 2016
- **Logic and AI Programming** (M.Sc.): guest lecturer, autumn 2013/14/15; course support leader, autumn 2013/14/15
- **Argumentation and Multi-Agent Systems** (4<sup>th</sup> year and M.Sc.): guest lecturer, spring 2014/15; course support leader, spring 2013/14/15

- **Introduction to AI** (2<sup>nd</sup> year): guest lecturer, spring 2014; course support leader, spring 2013/14/15/16
- **Logic, Discrete Maths, Reasoning about Programs** (1<sup>st</sup> year): tutorial leader, autumn 2013– spring 2014
- **Introduction to Prolog** (2<sup>nd</sup> year): tutorial helper, autumn 2012; course support leader, autumn 2013  
(all in the Department of Computing at Imperial College London)

As *guest lecturer* I prepared and held lectures, integrating new material into the existing course.

As *course leader* I organised students' presentations, led discussions, and marked students' essays.

As *course support leader* I organised and revised coursework, and led tutorial helpers and markers.

As *tutorial leader* I ran tutorials for 6-8 students on my own and marked their weekly homework.

### Supervision

- Lisa Andreevna Chalaguine (M.Sc. in Computing Science, final project): *Distinguishing "Good" from "Bad" Arguments in Online Debates*. 2016
- Dragos Dumitrache (2<sup>nd</sup> year, 10-week research project (UROP)): developing ArgTeach as a web-platform. 2015
- Ivan Podgurskiy (M.Eng. in Computing, final project): *Online LABAS Justification Builder*. 2015
- M.Sc. Group Project (M.Sc. in Computing Science): *A Human-Like Chess Tutor*. 2015
- Jeong Min Lee (M.Eng. in Computing, final project): *LABAS Justification Builder – A Graph-Tool for Answer Set Justification*. 2014
- Jeremie Dauphin (B.Eng. Mathematics and Computer Science, final project): *ArgTeach – A learning Tool for Argumentation Theory*. 2014

### 2<sup>nd</sup> Supervisor/Marker

- Bayan AlArifi (M.Sc. in Computing (Software Engineering), final project): *Collective-Decision Making in Social Networks and its Resistance to Bribery*. 2016
- Giorgos Flourentzos (M.Eng. in Computing, final project): *A Toolkit for Exploring Argumentation Logic*. 2014

## Professional Activities

### Involvement in Grant Proposals

- Member of the Network of Proposers of the COST Action Proposal OC-2016-1-20488 "DIGital FORensics: evidence Analysis via intelligent Systems and Practices" (2016)
- Member of the Network of Proposers of the COST Action Proposal OC-2016-1-20752 "Collective Decision Making and Computation" (2016)

### Leadership & Organisation

- *Judge* of the ACM Student Chapter Excellence Awards, May 2016
- *Co-Chair* of the International Workshop on User-Oriented Logic Programming (IULP), held in August 2015 in Cork, Ireland (co-located with ICLP 2015): I managed to *get sponsorship* from the Logic Programming Associates (LPA) which was spent on printed proceedings for participants.
- *Co-Organiser* of the Logic & AI Seminars at Imperial College London, since October 2014
- *Chair* of the Imperial College London ACM Student Chapter, August 2014 – July 2015
- *Treasurer* in the inaugural committee of the Imperial College London ACM Student Chapter, August 2013 – July 2014: I facilitated the acquisition of £2000 sponsorship.
- *Organiser* of the Student Seminars of the Imperial College London ACM Student Chapter, October 2013 – December 2014
- *Organiser* of an internship event for Ph.D. students in the Department of Computing at Imperial College London, November 2013: I brought in representatives from Google, IBM, Microsoft Research, Thomson Reuters, Entrepreneur First, and ZLemma.

- Part of the *Steering Committee* of the Imperial College Computing Student Workshop (ICCSW) 2013, 2014, 2015
- *Representative* of the 2<sup>nd</sup>/3<sup>rd</sup>/4<sup>th</sup> year Ph.D. students in the Department of Computing at Imperial College London, 2013 – 2014 / 2014 – 2015 / 2015 – 2016
- *Equipment Officer* of the Imperial College London Outdoor Club, August 2013 – July 2014
- *Judge* at the Research Symposium of the Imperial College London Graduate School, July 2013
- *Organiser* of a weekly social for Ph.D. students sponsored by the Department of Computing at Imperial College London, October 2012 – October 2013
- *Representative* of the M.Sc. Computing (Specialism) students in the Department of Computing at Imperial College London, 2011 – 2012

### **Reviewing for Journals**

- Artificial Intelligence
- Journal of Artificial Intelligence Research
- International Journal of Approximate Reasoning
- Argument & Computation
- Journal of Logic and Computation
- Fundamenta Informaticae

### **Member of Program Committees**

- 5<sup>th</sup> International Conference on Algorithmic Decision Theory (ADT), 2017
- 22<sup>nd</sup> European Conference on Artificial Intelligence (ECAI), 2016
- 15<sup>th</sup> International Conference on Principles of Knowledge Representation and Reasoning (KR), 2016
- 6<sup>th</sup> International Conference on Computational Models of Argument (COMMA), 2016
- 19<sup>th</sup> International Conference on Principles and Practice of Multi-Agent Systems (PRIMA), 2016
- 23<sup>rd</sup> RCRA International Workshop on Experimental Evaluation of Algorithms for Solving Problems with Combinatorial Explosion, 2016
- Workshop on Cognitive Knowledge Acquisition and Applications (Cognitum), 2016
- Workshop on Trends and Applications of Answer Set Programming (TAASP), 2016
- Workshop on Decision Making in Dynamic Information Environments (DeMaDIE), 2016
- 24<sup>th</sup> International Joint Conference on Artificial Intelligence (IJCAI), KR Track, 2015
- 18<sup>th</sup> International Conference on Principles and Practice of Multi-Agent Systems (PRIMA), 2015

### **Additional Reviewing for Conferences & Workshops**

- 14<sup>th</sup> International Conference on Principles of Knowledge Representation and Reasoning (KR), 2014
- 30<sup>th</sup> International Conference on Logic Programming (ICLP), 2014
- 29<sup>th</sup> International Conference on Logic Programming (ICLP), 2013
- 2<sup>nd</sup> International Workshop on Theory and Applications of Formal Argumentation (TAFa), 2013

### **Professional Membership**

- Association for the Advancement of Artificial Intelligence (AAAI)
- Association for Computing Machinery (ACM)
- The Society for the Study of Artificial Intelligence and Simulation Behaviour (AISB)
- Higher Education Academy (HEA): Fellow
- Imperial College London ACM Student Chapter

### **Attendance of Conferences and Workshops without presentation**

- Workshop on Foundations of the Language of Argumentation, September 2016
- 31<sup>st</sup> International Conference on Logic Programming (ICLP), September 2015
- International Workshop on User-Oriented Logic Programming (IULP), September 2015: Co-chair
- 5<sup>th</sup> Imperial College Computing Student Workshop (ICCSW), September 2015: Co-Organiser

- 4<sup>th</sup> Imperial College Computing Student Workshop (ICCSW), September 2014: Co-Organiser
  - Vienna Summer of Logic, July 2014: student volunteer, awarded **Student Travel Grant**
  - Summer School on Computational Logic, July 2014: **Student Travel Grant**
  - 3<sup>rd</sup> Imperial College Computing Student Workshop (ICCSW), September 2013: Co-Organiser
  - FIE Student Global Leadership Conference, April 2013
  - London Argumentation Forum (LAF), July 2012
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## References

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