

# Edward T. Grefenstette

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## Employment

**Fulford Junior Research Fellow**, Somerville College, Oxford, October 2013. – Present.  
**Postdoctoral Research Assistant**, Department of Computer Science, University of Oxford, October 2012 – Present.  
**College Lecturer**, Hertford College, Oxford, September 2011 – Present.  
**College Lecturer**, St Hilda's College, Oxford, September 2013 – Present.

## Education

**DPhil (PhD) Computer Science**, Balliol College, University of Oxford, Examined June 2013.

- Thesis: “Category-Theoretic Quantitative Compositional Distributional Models of Natural Language Semantics”.
- Supervised by Stephen Pulman, Bob Coecke and Mehrnoosh Sadrzadeh.
- Examined by Samson Abramsky and Shalom Lappin. Passed with minor corrections.

**MSc Computer Science**, Balliol College, University of Oxford, September 2009.

- Obtained with Distinction on coursework and dissertation.
- Dissertation: “Analysing Document Similarity Measures”, supervised by Stephen Pulman.

**MLitt Philosophy**, University of St. Andrews, September 2008.

- Thesis: “Reviving Mathematical Intuition: Steps Towards a ‘Neo-Poincaréan’ Philosophy of Mathematics”, supervised by Peter Clark.

**BSc Physics and Philosophy**, University of Sheffield, July 2007.

- Graduated with First Class Honours (*Summa Cum Laude*) in both subjects.
- Autumn Dissertation: “On an instrumentalist reading of Hilbert: a critique of Detlefsen”, supervised by Bob Hale.
- Spring Dissertation: “Does Blackburn’s quasi-realism threaten the foundations of Wright’s minimalism?”, supervised by Andrew Howat.
- Final year Physics Research Project: Designed a 10-lecture course on Quantum Computing.
- Final year Physics Research Paper: “Is String Theory Science?”

**Baccalauréat OIB**, CSI Europole, International High School, September 2003.

- Scientific Series (‘Série S’): heavy emphasis on Mathematics, Physics & Chemistry, and Biology & Earth sciences.
- Further specialisation in Physics & Chemistry in final year.

## Scholarships, Prizes & Grants

**\*SEM 2013 Best Long Paper Award**, awarded for the single-author paper “Towards a Formal Distributional Semantics: Simulating Logical Calculi with Tensors”, June 2013.

- Westerman Eastern Pathfinders Award**, awarded by Balliol College, Oxford, May 2013.
- Enhanced EPSRC Stipend**, awarded by Oxford University Computing Laboratory, October 2010.
- Supplement to EPSRC DTA awarded in 2009.
  - Awarded progressively, on the basis of good academic progression.
- EPSRC Doctoral Training Account Scholarship**, awarded by Oxford University Computing Laboratory, on behalf of Engineering and Physical Sciences Research Council, October 2009.
- Duration of 3.5 years, full scholarship (college and university fees, stipend, travel allowance).
  - Awarded on the basis of academic merit.
- Bishop Warner Bursary**, awarded by Balliol College, Oxford, November 2008.

## Books

**Heunen, C., Sadrzadeh, M. and Grefenstette, E. (eds.)** *Quantum physics and linguistics: a compositional, diagrammatic discourse*, Oxford University Press, February 2013.

## Journal Articles

- Grefenstette, E. and Sadrzadeh, M.**, Concrete Models and Empirical Evaluations for the Categorical Compositional Distributional Model of Meaning, upcoming in *Computational Linguistics*.
- Coecke, B., Grefenstette, E. and Sadrzadeh, M.**, Lambek vs. Lambek: Functorial Vector Space Semantics and String Diagrams for Lambek Calculus, to appear in *Annals of Pure and Applied Logic*, Expected 2013.
- Sadrzadeh, M. and Grefenstette, E.**, A Compositional Distributional Semantics, Two Concrete Constructions, and some Experimental Evaluations, *Lecture Notes in Computer Science: Quantum Interaction*, Springer, 2011.

## Book Chapters

- Clark, S., Coecke, B., Grefenstette, E., Pulman, S. and Sadrzadeh, S.**, A quantum teleportation inspired algorithm produces sentence meaning from word meaning and grammatical structure, [arXiv:1305.0556](https://arxiv.org/abs/1305.0556), to appear in Springer volume, expected 2014.
- Grefenstette, E., Sadrzadeh, M., Clark, S., Coecke, B. and Pulman, S.**, Concrete Compositional Sentence Spaces, *Computing Meaning, Vol. 4* (Bunt, H., Bos, J. and Pulman, S. eds.), Springer, 2013.

## Refereed Conference Papers

- Kalchbrenner, N., Grefenstette, E. and Blunsom, P.**, A Convolutional Neural Network for Modelling Sentences, *Proceedings of the 52nd Annual Meeting of the Association for Computational Linguistics*, 2014.
- Maillard J., Clark, S. and Grefenstette, E.**, A Type-Driven Tensor-Based Semantics for CCG, *EACL 2014 Type Theory and Natural Language Semantics Workshop*, 2014.
- Hermann K. M., Grefenstette, E. and Blunsom, P.**, “Not not bad” is not “bad”: A distributional account of negation, *Proceedings of the 2013 Workshop on Continuous Vector Space Models and their Compositionality*, 2013.
- Grefenstette, E.**, Towards a Formal Distributional Semantics: Simulating Logical Calculi with Tensors, *Proceedings of the Second Joint Conference on Lexical and Computational Semantics*, 2013.
- Grefenstette, E., Dinu, G., Zhang, Y., Sadrzadeh, M., and Baroni, M.**, Multi-Step Regression Learning for Compositional Distributional Semantics, *Proceedings of the 10th International Conference on Computational Semantics (IWCS 2013)*, 2013.
- Grefenstette, E. and Sadrzadeh, M.**, Experimenting with transitive verbs in a DisCoCat, *Proceedings of the GEMS 2011 Workshop on GEometrical Models of Natural Language Semantics*, 2011.
- Grefenstette, E. and Sadrzadeh, M.**, Experimental Support for a Categorical Compositional

Distributional Model of Meaning, *Proceedings of the 2011 Conference on Empirical Methods in Natural Language Processing*, 2011.

**Grefenstette, E., Sadrzadeh, M., Clark, S., Coecke, B., and Pulman, S.**, Concrete Sentence Spaces for Compositional Distributional Models of Meaning, *Proceedings of the 9th International Conference on Computational Semantics (IWCS 2011)*, 2011.

## Invited Talks

**Oxford Christmas Science Lectures, Oxford University, Oxford**, “Can Machines Think?,” December 11, 2013.

**Departmental Seminar, HKUST, Hong Kong**, “Quantum Information Flow made Classical: New Mathematics for Natural Language Compositionality,” September 2nd, 2013.

**CQT Seminar, National University of Singapore, Singapore**, “From Quantum Teleportation to Neural Tensor Networks,” August 28th, 2013.

**Departmental Seminar, School of Computer Science, Carnegie Mellon University, Pittsburgh**, “Categories, Vectors and Tensors, Oh My!: Pure Mathematics Meets Machine Learning,” August 15th, 2013.

**CIMeC Research Seminar, University of Trento, Rovereto**, “DisCoCat: A (Cat)egorical Framework for (Dis)tributional (Co)mpositional semantics,” June 23rd, 2011.

**Mavir Seminar, UNED, Madrid**, “Empirical Validation of Compositional Distributional Models of Meaning,” April 28th, 2011.

**NLP Seminar, University of Sheffield Department of Computer Science, Sheffield**, “Categorical Compositionality for Distributional Semantics, Without Tears,” April 7th, 2011.

**NLIP Seminar, University of Cambridge Computer Laboratory, Cambridge**, “Categorical Compositionality for Distributional Semantics” February 25th, 2011.

**Flowin’Cat 2010, Oxford**, “Concrete Sentence Spaces,” October 31st, 2010.

## Tutorials

**ACL 2014 Tutorial, *New Directions in Vector Space Models of Meaning***, with Phil Blunsom, Karl Moritz Hermann, Georgiana Dinu, June 22, 2014.

## Reviewing

**Journal Reviewing:** International Journal of Computer Mathematics; Computational Linguistics; Journal of Logic, Language and Information (JoLLI); Language and Linguistics Compass.

**Programme Committees:** ACL 2014, EACL 2014, IJCNLP 2013 (Syntax and Semantics), \*SEM 2013 (Morphology and Semantics), \*SEM 2013 (Sentence-level Semantic Processing), ACL 2013 (Student Workshops), NAACL 2013 (Semantics), IWCS 2013, TFDS (IWCS Workshop) 2013, \*SEM 2012, EACL 2011 (Semantics).

**Reviewer, “Doing Philosophy: A Practical Guide for Students”**, Higher Education Academy PRS Subject Centre, Continuum Press, April 2008.

## Conference Organisation & Professional Activities

**Workshop Organiser, 2nd Workshop on Continuous Vector Space Models and their Compositionality** at EACL 2014, April 27, 2014.

## Teaching

**Lecturer**, Formal Foundations of Linguistics, Oxford University Faculty of Linguistics, Philology and Phonetics, October 2013 – December 2013.

**Lecturer**, Computational Linguistics, Oxford University Department of Computer Science (DCS), January 2013 – April 2013.

**College Tutor**, Discrete Mathematics, Probability, Functional Programming, Design and Analysis of Algorithms, Hertford College, Oxford, October 2012 – Present.

**Practical Demonstrator**, Information Retrieval, Oxford University DCS, January 2011 – December 2012.

**Class Tutor**, Computational Linguistics, Oxford University DCS, October 2011 – December 2011.

**Practical Demonstrator**, Intelligent Systems, Oxford University DCS, October 2011 – December 2011.

**Class Tutor**, Information Retrieval, Oxford University Computing Laboratory (OUCL), January 2011 – April 2011.

**Practical Demonstrator**, Reasoning about Information Update, OUCL, January 2011 – April 2011.

**College Tutor**, Object-Oriented Programming, Balliol College, Oxford, October 2010 – December 2010.

**Class Tutor**, Computational Linguistics, OUCL, October 2010 – December 2010.

**Teaching Assistant**, Information Retrieval, OUCL, January 2010 – March 2010.

**Practical Demonstrator**, Intelligent Systems II, OUCL, January 2010 – March 2010.

**Private Tutor**, PPE Prelim Formal Logic. Oxford, United Kingdom, April 2009 – July 2009.

**English Language Teacher**, Kokusai Eiken Center, International School of Sacred Heart, Tokyo, Japan, July 2007 – August 2007.

**Private Tutor**, French, Mathematics. Sheffield, United Kingdom, November 2004 – July 2006.

**Assistant English Language Teacher**, Kokusai Eiken Center, St. Mary's International School, Tokyo, Japan, July 2003 – August 2003 and July 2005 – August 2005.

#### Misc. Positions & Responsibilities

**Balliol Research Committee Member**, July 2010 – October 2012.

**Peer Supporter, Balliol College**, October 2010 – December 2012.

**Balliol MCR Committee Member**, May 2009 – June, 2010.

**Holywell Manor Bar Manager**, May 2009 – June 2010.

**Higher Education Academy PRS Subject Centre Advisory Board Member**, September 2006 – June 2007.

**British Undergraduate Philosophy Society Chair**, September 2006 – June 2007.

**British Undergraduate Philosophy Society Committee Officer**, February 2006 – June 2007.

#### Programming

- Proficient in C, Python.
- Some knowledge of C++, Java, Haskell, MATLAB, Scala.

#### Personal

Birth Date: October 7th 1985, Chambray-les-Tours, France. US & French Citizen.

Fluent in French & English. Some knowledge of Italian (5 years) and Japanese (2 years).

Sports: Squash, Fencing, Aikido, Kendo, Cricket (Balliol MCR team: 2009 – 2011), Rowing (BCBC: Michaelmas 2009 – 2011), Karate (Oxford University, Michaelmas 2011 – Present).

Sang in Balliol College Chapel Choir, October 2009 – June 2011.

**References available upon request.**

**Latest revision: April 5, 2014.**