Matthew Purver

BA (Hons), MPhil, PhD

Email	`m.purver@qmul.ac.uk`	**Date of Birth**	26th May 1970
Web	`www.eecs.qmul.ac.uk/~mpurver`	**Marital Status**	Married
Telephone	(+44) 20 7882 5257	**Nationality**	British

Summary

I am currently a Lecturer in Human Interaction in the Department of Computer Science at Queen Mary, University of London. My research field is computational linguistics, specifically the semantics and pragmatics of dialogue and the incremental processes of understanding, clarification and repair – both from a theoretical viewpoint and as applied to practical computational dialogue systems.

From 2004 to 2008 I was an Engineering Research Associate at the Center for the Study of Language and Information, Stanford University. I received my PhD in 2004 from the University of London; before that, a master's degree in speech & language processing from the University of Cambridge. Prior to this I worked for some years as an engineer in the field of active noise & vibration control.

I have published several journal, conference and workshop papers, been involved in successful research grant applications, and taught and supervised students at undergraduate, masters, and doctoral levels. My time in industry also gives me experience in project and people management, as well as some broad technical knowledge.

Education and Employment History

Jan 2009 – present	**Senior Research Fellow** until Nov 2009, **Lecturer** Dec 2009 onwards. *Interaction, Media and Communication Group (director: Prof. P. Healey),* *Department of Computer Science, Queen Mary University of London, UK.* Currently working on the ESRC-sponsored *Dynamics of Conversational Dialogue* project, investigating incremental processing in dialogue and its repercussions for theoretical and computational models. I am involved in linguistic modelling, empirical corpus analysis, human dialogue experimentation, and computational implementation.
Jan 2008 – Jan 2009	(Travelling, remaining affiliated to CSLI, Stanford for writing and publication purposes. See `www.culinaryanthropologist.org` for an account of our culinary travels).
Jul 2004 – Dec 2007	**Engineering Research Associate**. *Computational Semantics Lab (director: Prof. S. Peters),* *Center for the Study of Language and Information, Stanford University, USA.* Various projects as a postdoctoral researcher, including the DARPA *CALO* project, investigating the combination of deep and shallow techniques for robust multimodal understanding in an automatic human-human meeting understanding system; and the NIST-sponsored *CHAT* project developing a multi-device in-car dialogue system in partnership with VW and Bosch.
Sep 2000 – Jun 2004	***PhD, Computational Linguistics (examined June 2004, awarded 30th September 2004)*.** **Research Assistant (2003-4)**. *Logic, Language and Computation Group,* *Department of Computer Science, King's College London, UK.* My PhD thesis (supervised by Jonathan Ginzburg as part of the EPSRC *ROSSINI* project) concerned the semantics and pragmatics of clarification with particular regard to computational dialogue systems, and included developing a prototype dialogue system which could interpret and answer user clarifications; and initiate its own clarificational dialogue to adapt to unknown words and references. From October 2003 I worked on the *Dialogue Dynamics* ESRC project with Prof. Ruth Kempson, investigating the use of Dynamic Syntax in dialogue modelling and its implementation within a dialogue system. This project was ranked 'outstanding' by the ESRC.

Oct 1999 – Aug 2000	***MPhil, Computer Speech and Language Processing (2000)***. *University of Cambridge, UK.* My dissertation "Simplistic Question Answering", supervised by Karen Spärck Jones, examined the use of sentence structure in an open-domain question-answering system.
Apr 1995 – Aug 1999	**Aircraft Systems Manager**. *Ultra Electronics Ltd., Noise and Vibration Systems.* Ultra NVS became the world leader in aircraft active noise & vibration control systems. As Aircraft Systems Manager, in charge of the System Design Group, I was responsible for designing and optimising control system configurations, developing algorithms, investigating new applications and planning and leading research projects.
Aug 1992 – Mar 1995	**Scientist**. *Noise Cancellation Technologies (UK) Ltd.* NCT (UK) was a small research and development company based in Cambridge, which developed the active control technology since used successfully by Ultra NVS.
Oct 1989 – Jun 1992	***BA (Hons), Engineering (1992)***. *University of Cambridge, UK.* Awarded Scholarship 1990, 1991. Part II - 2:1; Part IB - 1; Part IA - 1.

Funding and Grant Proposals

- Contributed to successful ESRC research grant proposals: Dialogue Dynamics I, 2003 (ranked outstanding); Dynamics of Conversational Dialogue, 2007 (named researcher).

- Contributed to successful Leverhulme Trust research network proposal: DialogueMatters, 2005.

- Contributing or main author on successful research grant proposals to US ONR (Targeted Understanding, 2008) and NSF (Perceptually Situated Human-Robot Dialog Models, 2006), and CALO project-internal proposals 2005-7 (resulting in increased funding share).

Teaching and Supervision

- Lecturer on MSc and BSc courses at Queen Mary: Interaction Design, Interactive Systems Design. Supervisor for PhD and MSc students.

- Taught MSc and undergraduate course lectures at King's College London, 2002-4: Computational Models of Dialogue, Computational Semantics, Numerical Representation, Prolog.

- Assisted with MSc and undergraduate student project supervision at Stanford and KCL.

Other Professional Activities

- Programme Co-Chair for the 2010 SemDial workshop on the semantics and pragmatics of dialogue (to be held in Poznań, Poland).

- Local Chair for the 2009 SIGDIAL Conference in discourse and dialogue (held at Queen Mary, University of London, UK in September 2009).

- Reviewer for UK Economic and Social Research Council (ESRC) research grant proposals 2007/2009.

- Reviewer for several journals, including *Computational Linguistics*, *Dialogue and Discourse*, *Research on Language and Computation*, *Speech Communication*, *Discourse Processes*, *Journal of Logic, Language and Information* and *Journal of Natural Language Engineering*.

- Programme committee member for several conferences and workshops, including ACL, SIGDIAL, SemDial, EMNLP, ICASSP, EACL and HLT/NAACL.

Publications – Journal Articles

Fernández, Frampton, Purver, Peters. **Second-Person Pronoun Resolution in Multi-Party Spoken English Dialogue**. In preparation.

Purver, Fernández, Frampton, Ehlen, Niekrasz, Peters. **Getting a Piece of the Action: Targeted Understanding for Multi-Party Dialogue**. In preparation.

Gargett, Gregoromichelaki, Kempson, Purver, Sato. **Grammar Resources for Modelling Dialogue Dynamically**. *Cognitive Neurodynamics* (in press), 2009.

Tur, Stolcke, Voss, Peters, Hakkani-Tür, Dowding, Favre, Fernández, Frampton, Frandsen, Frederickson, Graciarena, Kintzing, Leveque, Mason, Niekrasz, Purver, Riedhammer, Shriberg, Tien, Vergyri, Yang. **The CALO Meeting Assistant System**. *IEEE Transactions on Audio, Speech and Language Processing* (in press), 2009.

Dowman, Savova, Griffiths, Körding, Tenenbaum, Purver. **A Probabilistic Model of Meetings that Combines Words and Discourse Features**. *IEEE Transactions on Audio, Speech and Language Processing* 16(7), 2008.

Cann, Kempson, Purver. **Context and Well-formedness: the Dynamics of Ellipsis**. *Research on Language and Computation* 5(3), September 2007.

Purver. **CLARIE: Handling Clarification Requests in a Dialogue System**. *Research on Language and Computation* 4(2-3), 2006.

Purver, Cann, Kempson. **Grammars as Parsers: Meeting the Dialogue Challenge**. *Research on Language and Computation* 4(2-3), 2006.

Purver, Ginzburg. **Clarifying Noun Phrase Semantics**. *Journal of Semantics* 21(3), 2004.

Publications – Book Chapters

Purver. **Topic Segmentation**. In G. Tur, ed., *Spoken Language Understanding*, Wiley (to appear).

Gruenstein, Niekrasz, Purver. **Meeting Structure Annotation: Annotations Collected with a General Purpose Toolkit**. In *Recent Trends in Discourse and Dialogue*, Springer-Verlag, 2008.

Purver, Niekrasz, Ehlen. **Automatic Annotation of Dialogue Structure from Simple User Interaction**. In *Machine Learning for Multimodal Interaction*, Springer-Verlag, 2008.

Purver, Ehlen, Niekrasz. **Detecting Action Items in Multi-Party Meetings: Annotation and Initial Experiments**. In *Machine Learning for Multimodal Interaction*, Springer-Verlag, 2006.

Niekrasz, Purver. **A Multimodal Discourse Ontology for Meeting Understanding**. In *Machine Learning for Multimodal Interaction: Revised Selected Papers*, Springer-Verlag, 2006.

Purver, Ginzburg, Healey. **On the Means for Clarification in Dialogue**. In *Current and New Directions in Discourse and Dialogue*, Kluwer Academic Publishers, 2003.

Ginzburg, Sag, Purver. **Integrating Conversational Move Types in the Grammar of Conversation**. In *Perspectives on Dialogue in the New Millennium*, John Benjamins, 2003.

Publications – Refereed Conference/Workshop Papers

(selected – full list available at `www.dcs.qmul.ac.uk/~mpurver/publications.html`)

Purver, Fernández, Frampton, Peters. **Cascaded Lexicalised Classifiers for Second-Person Reference Resolution**. To appear in *Proceedings of the SIGDIAL 2009 Conference*, September 2009.

Purver, Howes, Gregoromichelaki, Healey. **Split Utterances in Dialogue: a Corpus Study**. To appear in *Proceedings of the SIGDIAL 2009 Conference*, September 2009.

Kempson, Gregoromichelaki, Purver, Mills, Gargett, Howes. **How Mechanistic Can Accounts of Interaction Be?** In *Proceedings of the 13th SEMDIAL Workshop on the Semantics and Pragmatics of Dialogue (DiaHolmia)*, June 2009.

Fernández, Frampton, Ehlen, Purver, Peters. **Modelling and Detecting Decisions in Multi-Party Dialogue**. In *Proceedings of the 9th SIGDIAL Workshop on Discourse and Dialogue*, June 2008.

Ehlen, Purver, Niekrasz, Peters, Lee. **Meeting Adjourned: Off-line Learning Interfaces for Automatic Meeting Understanding**. In *Proceedings of the International Conference on Intelligent User Interfaces*, January 2008.

Purver, Dowding, Niekrasz, Ehlen, Noorbaloochi, Peters. **Detecting and Summarizing Action Items in Multi-Party Dialogue**. In *Proceedings of the 8th SIGDIAL Workshop on Discourse and Dialogue*, September 2007.

Gupta, Purver, Jurafsky. **Disambiguating Between Generic and Referential "You" in Dialog**. In *Proceedings of ACL 2007*, June 2007.

Purver, Ratiu, Cavedon. **Robust Interpretation in Dialogue by Combining Confidence Scores with Contextual Features**. In *Proceedings of the 9th International Conference on Spoken Language Processing (Interspeech/ICSLP)*, September 2006.

Varges, Purver. **Robust Language Analysis and Generation for Spoken Dialogue Systems**. In *Proceedings of the ECAI 2006 workshop on Development and Evaluation of Robust Spoken Dialogue Systems for Real Applications*, August 2006.

Purver, Körding, Griffiths, Tenenbaum. **Unsupervised Topic Modelling for Multi-Party Spoken Discourse**. In *Proceedings of COLING/ACL*, July 2006.

Purver, Kempson. **Incremental Parsing, or Incremental Grammar?** In *Proceedings of the ACL Workshop on Incremental Parsing*, July 2004.

Purver, Kempson. **Context-Based Incremental Generation for Dialogue**. In *Proceedings of the 3rd International Conference on Natural Language Generation*, July 2004.

Purver, Fernández. **Utterances as Update Instructions**. In *Proceedings of the 7th Workshop on the Semantics and Pragmatics of Dialogue (DiaBruck)*, September 2003.

Purver, Healey, King, Ginzburg, Mills. **Answering Clarification Questions**. In *Proceedings of the 4th SIGDIAL Workshop on Discourse and Dialogue*, July 2003.

Publications – PhD Thesis

Purver. **The Theory and Use of Clarification Requests in Dialogue**. *PhD Thesis, Univ. of London*, 2004.