



Proceedings of the Ninth International Workshop on

Natural Language Generation

Niagara-on-the-Lake, Ontario, Canada

5-7 August 1998



Sponsored by the Association for Computational Linguistics

100

100

100

100

100

100

Welcome

The study of automated Natural Language Generation has had a long and varied history. Usually overshadowed by larger efforts in parsing, semantic analysis, grammar development, lexical studies, and lately statistical processing, progress is slower in NLG than in some other areas of Computational Linguistics. And though the importance of the topic has always been recognized, the difficulty of the topic has usually not been appreciated by most people not directly involved with generation. Undeservedly, generation is often seen as somewhat easier than parsing and semantic analysis, simply because it is easier to build a low-quality realizer than a low-quality parser or analyzer. But when the stages of text planning and sentence planning are factored in, and the problem of expressive variation is faced, the true complexity of generation becomes apparent. That's when one sees the need for much deeper theories of discourse, lexis, and pragmatics than are currently available!

NLG has been fortunate, though, in having a dedicated and loyal core set of practitioners. Their ongoing concern is reflected in the active workshop series. About a decade after some of the first papers on sentence generation appeared, the first NLG Workshop was held. Soon, the international workshops became a regular biennial series, alternating between North America and Europe. From the rather modest beginning as a small workshop in Germany in 1983, the INLG workshop has become a sought-after event, regularly attended by around 60 researchers: Stettenfels, Germany (1983); Stanford University, California (1984); Nijmegen, The Netherlands (1986); Santa Catalina Island, California (1988); Dawson, Pennsylvania (1990); Trento, Italy (1992); Kennebunkport, Maine (1994); Herstmonceaux, England (1996); Niagara-on-the-Lake, Canada (1998). In addition, the European workshops, held in the intervening years since 1987, have also become an ongoing series.

We are in the fortunate position today of being able to wonder whether we should change the workshops into conferences. This year, an unprecedentedly large number of papers was submitted. Registration soon reached capacity of near 100. The traditional number of around 60 attendees seems to be a thing of the past. New projects, on all aspects of NLG, seem to be thriving.

There are also encouraging signs of awareness of the need to fund NLG research, and of its practical utility in commercial systems. The European Union, some European countries, some larger Japanese software companies, and the Canadian Government have shown continued willingness to fund NLG. Even the decade-long absence of funding from the larger US funding agencies may perhaps soon come to an end.

Many thanks are due to the following sponsors:

- the University of Waterloo's Institute for Computer Research (ICR), for funding, administrative supplies, and the services of Jean Webster;
- the American Association for Artificial Intelligence (AAAI), for funding to support student attendance;
- the University of Waterloo's Academic Development Fund, for funding of administrative costs.

I would like to thank the program committee and the local arrangements committee, listed at left, for their very hard work in making this workshop so successful. Special thanks to Chrysanne DiMarco and Graeme Hirst, who continued the tradition of holding the workshop in very pleasant surroundings.

With all this positive news, welcome to the 1998 international natural language generation workshop!

Eduard Hovy, Program Chair
Information Sciences Institute
Marina del Rey, CA
June, 1998

Table of Contents

Papers

<p>Natural Language Generation Journeys to Interactive 3D Worlds</p> <p style="padding-left: 2em;"><i>James C. Lester, William H. Bares, Charles B. Callaway, Stuart G. Towns</i> (North Carolina State University, Raleigh, USA)</p> <p>Communicative goal-driven NL generation and data-driven graphics generation: An architectural synthesis for multimedia page generation</p> <p style="padding-left: 2em;"><i>John Bateman, Thomas Kamps, Jörg Kleinz, Klaus Reichenberger</i> (University of Stirling, Scotland / Darmstadt University, Germany)</p> <p>A principled representation of attributive descriptions for generating integrated text and information graphics presentations</p> <p style="padding-left: 2em;"><i>Nancy Green, Giuseppe Carenini, Johanna Moore</i> (University of Pittsburgh, USA)</p> <p>An architecture for opportunistic text generation</p> <p style="padding-left: 2em;"><i>Chris Mellish, Mick O'Donnell, Jon Oberlander, Alistair Knott</i> (University of Edinburgh, Scotland)</p> <p>Controlled realization of complex objects by reversing the output of a parser</p> <p style="padding-left: 2em;"><i>David McDonald</i> (Gensym Corp, Boston MA, USA)</p> <p>De-constraining text generation</p> <p style="padding-left: 2em;"><i>Stephen Beale, Sergei Nirenburg, Evelyne Viegas, Leo Wanner</i> (CRL, New Mexico State University, USA)</p> <p>Automatic generation of subway directions: Saliency gradation as a factor for determining message and form</p> <p style="padding-left: 2em;"><i>Lidia Fraczak, Guy Lapalme, Michael Zock</i> (LIMSI-CNRS, Orsay, France / University of Montreal, Canada)</p> <p>Introducing maximal variation in text planning for small domains</p> <p style="padding-left: 2em;"><i>Erwin Marsi</i> (University of Nijmegen, The Netherlands)</p> <p>A new approach to expert system explanations</p> <p style="padding-left: 2em;"><i>Regina Barzilay, Daryl McCullough, Owen Rambow, Jonathan DeChristofaro, Tanya Korelsky, Benoit Lavoie</i> (CoGenTex Inc., Ithaca / Columbia University, New York / University of Delaware, USA)</p> <p>Macroplanning with a cognitive architecture for the adaptive explanation of proofs</p> <p style="padding-left: 2em;"><i>Armin Fiedler</i> (University of the Saarland, Saarbrücken, Germany)</p> <p>Experiments using stochastic search for text planning</p> <p style="padding-left: 2em;"><i>Chris Mellish, Alistair Knott, Jon Oberlander, Mick O'Donnell</i> (University of Edinburgh, Scotland)</p> <p>Abductive reasoning for syntactic realization</p> <p style="padding-left: 2em;"><i>Ralf Klabunde, Martin Jansche</i> (University of Heidelberg, Germany / Ohio State University, Columbus, USA)</p> <p>Generating warning instructions by planning accidents and injuries</p> <p style="padding-left: 2em;"><i>Daniel Ansari, Graeme Hirst</i> (University of Toronto, Canada)</p> <p>Discourse marker choice in sentence planning</p> <p style="padding-left: 2em;"><i>Brigitte Grote, Manfred Stede</i> (University of Magdeburg, Germany / TU Berlin, Germany)</p>	<p>2</p> <p>8</p> <p>18</p> <p>28</p> <p>38</p> <p>48</p> <p>58</p> <p>68</p> <p>78</p> <p>88</p> <p>98</p> <p>108</p> <p>118</p> <p>128</p>
---	--

Clause aggregation using linguistics knowledge	138
<i>James Shaw</i>	
<i>(Columbia University, New York, USA)</i>	
Attention during argument generation and presentation	148
<i>Ingrid Zukerman, Richard McConachy, Kevin Korb</i>	
<i>(Monash University, Melbourne, Australia)</i>	
Planning dialogue contributions with new information	158
<i>Kristiina Jokinen, Hideki Tanaka, Akio Yokoo</i>	
<i>(ATR Research Laboratories, Kyoto, Japan)</i>	
Generation of noun compounds in Hebrew: Can syntactic knowledge be fully encapsulated?	168
<i>Yael Dahan Netzer, Michael Elhadad</i>	
<i>(Ben Gurion University, Israel)</i>	
Textual economy through close coupling of syntax and semantics	178
<i>Matthew Stone, Bonnie Webber</i>	
<i>(University of Pennsylvania, Philadelphia, USA)</i>	
A language-independent system for generating feature structures from interlingua representations ..	188
<i>Murat Temizsoy, Ilyas Cicekli</i>	
<i>(Bilkent University, Ankara, Turkey)</i>	
Toward multilingual protocol generation for spontaneous speech dialogues	198
<i>Jan Alexandersson, Peter Poller</i>	
<i>(DFKI, Saarbrücken, Germany)</i>	
Fully lexicalized head-driven syntactic generation	208
<i>Tilman Becker</i>	
<i>(DFKI, Saarbrücken, Germany)</i>	
Approaches to surface realization with HPSG	218
<i>Graham Wilcock</i>	
<i>(University of Manchester, England)</i>	
The Multex generator and its environment: Application and development	228
<i>Christian Matthiessen, Licheng Zeng, Marilyn Cross, Ichiro Kobayashi,</i>	
<i>Kazuhiro Teruya, Canzhong Wu</i>	
<i>(Macquarie University, Sydney, Australia)</i>	
A flexible shallow approach to text generation	238
<i>Stephan Busemann, Helmut Horacek</i>	
<i>(DFKI, Saarbrücken, Germany)</i>	
The practical value of <i>n</i> -grams in generation	248
<i>Irene Langkilde, Kevin Knight</i>	
<i>(USC/ISI, Marina del Rey, USA)</i>	
Generation as a solution to its own problem	256
<i>Donia Scott, Richard Power, Roger Evans</i>	
<i>(ITRI, Brighton, England)</i>	
EXEMPLARS: A practical, extensible framework for dynamic text generation	266
<i>Michael White and Ted Caldwell</i>	
<i>(CoGenTex Inc., Ithaca NY, USA)</i>	

System demonstration descriptions

Amalia: NLG with abstract machine	276
<i>Evgeniy Gabrilovich, Nissim Francez, Shuly Wintner</i>	
<i>(Technion, Haifa, Israel / University of Tübingen, Germany)</i>	
Circsum-Tutor: Content planning in a tutoring system	280
<i>Reva Freedman, Stefan Brandle, Michael Glass, Jung Hee Kim, Yujian Zhou,</i>	
<i>Martha Evens</i>	
<i>(University of Pittsburgh / Illinois Institute of Technology, USA)</i>	

FLAUBERT: User-friendly multilingual NLG	284
<i>Frédéric Meunier, Laurence Danlos</i>	
<i>(TALANA UFR Linguistique, Paris, France)</i>	
GBGen: Large-scale domain-independent GB syntax	288
<i>Thierry Etchegoyhen, Thomas Wehrle</i>	
<i>(LATL and FPSE, University of Geneva, Switzerland)</i>	
GoalGetter: Generation of spoken soccer reports	292
<i>Mariët Theune, Esther Klabbers</i>	
<i>(IPO, Eindhoven University of Technology, The Netherlands)</i>	
MLWFA: Multilingual weather forecasting system	296
<i>Tianfang Yao, Dongmo Zhang, Qian Wang</i>	
<i>(Shanghai Jiao Tong University, Shanghai, China)</i>	
MultiMeteo: Interactive generation of weather reports	300
<i>José Coch</i>	
<i>(ERLI, Charenton-le-Pont, France)</i>	
ROMVOX: Text-to-speech synthesis of Romanian	304
<i>Attila Ferencz, Teodora Ratiu, Maria Ferencz, Tünde-Csilla Kovacs, István Nagy,</i>	
<i>Diana Zaiu</i>	
<i>(Technical University / Software ITC, Cluj-Napoca, Romania)</i>	
WYSIWYM: Knowledge editing with NL feedback	308
<i>Richard Power, Donia Scott.</i>	
<i>(ITRI, University of Brighton, England)</i>	

Workshop Program

Tuesday, August 4

- 18:00 Reception
- 19:30 Dinner

Wednesday, August 5

Session 1: Planning and Generation with Multiple Media

- 8:30 Opening
- 8:45 Invited talk: Natural Language Generation Journeys to Interactive 3D Worlds
James C. Lester, William H. Bares, Charles B. Callaway, Stuart G. Towns
- 9:30 Communicative Goal-Driven NL Generation and Data-Driven Graphics Generation:
An Architectural Synthesis for Multimedia Page Generation
John Bateman, Thomas Kamps, Jörg Kleinz, Klaus Reichenberger
- 10:00 A Principled Representation of Attributive Descriptions for Generating Integrated Text and
Information Graphics Presentations
Nancy Green, Giuseppe Carenini, Johanna Moore
- 10:30 Break

Session 2: Architectural Questions

- 11:00 An Architecture for Opportunistic Text Generation
Chris Mellish, Mick O'Donnell, Jon Oberlander, Alistair Knott
- 11:30 Controlled Realization of Complex Objects by Reversing the Output of a Parser
David McDonald
- 12:00 De-Constraining Text Generation
Stephen Beale, Sergei Nirenburg, Evelyne Viegas, Leo Wanner
- 12:30 Lunch

Session 3: Joint Planning of Content and Formulation

- 14:00 Automatic Generation of Subway Directions: Saliency Gradation as a Factor for Determining
Message and Form
Lidia Fraczak, Guy Lapalme, Michael Zock
- 14:30 Introducing Maximal Variation in Text Planning for Small Domains
Erwin Marsi
- 14:45 A New Approach to Expert System Explanations
Regina Barzilay, Owen Rambow, Daryl McCullough
- 15:00 Macroplanning with a Cognitive Architecture for the Adaptive Explanation of Proofs
Armin Fiedler
- 15:15 Discussion
- 15:30 Break

Outing

- 16:00 Scenic tour to Niagara Falls and dinner
- 22:30 Return to hotel

Thursday, August 6

Session 4: Sentence Planning 1: Inference and Content

- 9:00 Experiments Using Stochastic Search for Text Planning
Chris Mellish, Alistair Knott, Jon Oberlander, Mick O'Donnell
- 9:30 Abductive Reasoning for Syntactic Realization
Ralf Klabunde, Martin Jansche
- 10:00 Generating Warning Instructions by Planning Accidents and Injuries
Daniel Ansari, Graeme Hirst
- 10:30 Break

Session 5: Sentence Planning 2: Subtasks

- 11:00 Discourse Marker Choice in Sentence Planning
Brigitte Grote, Manfred Stede
- 11:30 Clause Aggregation using Linguistics Knowledge
James Shaw
- 11:45 Attention during Argument Generation and Presentation
Ingrid Zukerman, Richard McConachy, Kevin Korb
- 12:00 Planning Dialogue Contributions with New Information
Kristiina Jokinen, Hideki Tanaka, Akio Yokoo
- 12:15 Discussion
- 12:30 Lunch

Session 6: Relationships between Semantics, Syntax, Lexis, and Morphology

- 14:00 Generation of Noun Compounds in Hebrew: Can Syntactic Knowledge be Fully Encapsulated?
Yael Dahan Netzer, Michael Elhadad
- 14:30 Textual Economy through Close Coupling of Syntax and Semantics
Matthew Stone, Bonnie Webber
- 14:45 A Language-Independent System for Generating Feature Structures From Interlingua Representations
Murat Temizsoy, Ilyas Cicekli
- 15:00 Toward Multilingual Protocol Generation for Spontaneous Speech Dialogues
Jan Alexandersson, Peter Poller
- 15:15 Discussion
- 15:30 Break

System demonstrations (2 sessions, in parallel)

- | | |
|--|---|
| 16:00 FLAUBERT
User-friendly multilingual NLG
<i>Frédéric Meunier, Laurence Danlos</i> | 16:00 ROMVOX
Text-to-speech synthesis of Romanian
<i>Attila Ferencz, Teodora Ratiu, Maria Ferencz, Tünde-Csilla Kovács, István Nagy, Diana Zaiu</i> |
| 16:20 GoalGetter
Generation of spoken soccer reports
<i>Mariët Theune, Esther Klabbers</i> | 16:20 MultiMeteo
Interactive weather report generation
<i>José Coch</i> |
| 16:40 GBGen
Large-scale domain-indep. GB syntax
<i>Thierry Etchegoyhen, Thomas Wehrle</i> | 16:40 MLWFA
Multilingual weather forecasts
<i>Tianfang Yao, Dongmo Zhang, Qian Wang</i> |

17:00 Amalia
NLG with Abstract Machine for
Typed Feature Structures
*Evgeniy Gabrilovich, Nissim Francez,
Shuly Wintner*

17:00 Circsum-Tutor
Content planning in a tutoring system
*Reva Freedman, Stefan Brandle, Michael
Glass, Jung Hee Kim, Yujian Zhou,
Martha Evens*

17:20 WYSIWYM
Knowledge editing with NL feedback
Richard Power, Donia Scott

18:00 Dinner

Friday, August 7

Session 7: Realization: Deep and Shallow Grammars

- 9:00 Fully Lexicalized Head-Driven Syntactic Generation
Tilman Becker
- 9:15 Approaches to Surface Realization with HPSG
Graham Wilcock
- 9:30 The Multex Generator and its Environment: Application and Development
*Christian Matthiessen, Licheng Zeng, Marilyn Cross, Ichiro Kobayashi, Kazuhiro Teruya,
Canzhong Wu*
- 9:45 A Flexible Shallow Approach to Text Generation
Stephan Busemann and Helmut Horacek
- 10:00 The Practical Value of *N-Grams* in Generation
Irene Langkilde, Kevin Knight
- 10:15 Discussion
- 10:30 Break

Session 8: Constructing the Input

- 11:00 Generation as a Solution to its Own Problem
Donia Scott, Richard Power, Roger Evans
- 11:15 EXEMPLARS: A Practical, Extensible Framework for Dynamic Text Generation
Michael White, Ted Caldwell
- 11:30 Discussion

Panel

- 11:45 Reference Architectures for Language Generators
Eduard Hovy (moderator), Stephan Busemann, Robert Dale, Chris Mellish, Donia Scott
- 12:30 Lunch

Author List

Jan Alexandersson	198
Toward Multilingual Protocol Generation for Spontaneous Speech Dialogues	
Daniel Ansari	118
Generating Warning Instructions by Planning Accidents and Injuries	
William H. Bares	2
Natural Language Generation Journeys to Interactive 3D Worlds	
Regina Barzilay	78
A New Approach to Expert System Explanations	
John Bateman	8
Communicative Goal-Driven NL Generation and Data-Driven Graphics Generation: An Architectural Synthesis for Multimedia Page Generation	
Stephen Beale	48
De-Constraining Text Generation	
Tilman Becker	208
Fully Lexicalized Head-Driven Syntactic Generation	
Stefan Brandle	280
Circsum-Tutor: Content Planning in a Tutoring System (<i>system demo</i>)	
Stephan Busemann	238
A Flexible Shallow Approach to Text Generation	
Ted Caldwell	266
EXEMPLARS: A Practical, Extensible Framework for Dynamic Text Generation	
Charles B. Callaway	2
Natural Language Generation Journeys to Interactive 3D Worlds	
Giuseppe Carenini	18
A Principled Representation of Attributive Descriptions for Generating Integrated Text and Information Graphics Presentations	
Ilyas Cicekli	188
A Language-Independent System for Generating Feature Structures from Interlingua Representations	
José Coch	300
MultiMeteo: Interactive weather report generation (<i>system demo</i>)	
Marilyn Cross	228
The Muxex Generator and its Environment: Application and Development	
Yael Dahan Netzer	168
Generation of Noun Compounds in Hebrew: Can Syntactic Knowledge be Fully Encapsulated?	
Laurence Danlos	284
FLAUBERT: User-friendly multilingual NLG (<i>system demo</i>)	
Jonathan DeChristofaro	78
A New Approach to Expert System Explanations	
Michael Elhadad	168
Generation of Noun Compounds in Hebrew: Can Syntactic Knowledge be Fully Encapsulated?	
Thierry Etchegoyhen	288
GBGen: Large-scale domain-independent GB syntax (<i>system demo</i>)	
Roger Evans	256
Generation as a Solution to its Own Problem	
Martha Evens	280
Circsum-Tutor: Content Planning in a Tutoring System (<i>system demo</i>)	
Attila Ferencz	304
ROMVOX: Text-to-speech synthesis of Romanian (<i>system demo</i>)	
Maria Ferencz	304
ROMVOX: Text-to-speech synthesis of Romanian (<i>system demo</i>)	

Armin Fiedler	88
Macroplanning with a Cognitive Architecture for the Adaptive Explanation of Proofs	
Lidia Fraczak	58
Automatic Generation of Subway Directions: Saliency Gradation as a Factor for Determining Message and Form	
Nissim Francez	276
Amalia: NLG with Abstract Machine(<i>system demo</i>)	
Reva Freedman	280
Circsum-Tutor: Content Planning in a Tutoring System (<i>system demo</i>)	
Evgeniy Gabrilovich	276
Amalia: NLG with Abstract Machine(<i>system demo</i>)	
Michael Glass	280
Circsum-Tutor: Content Planning in a Tutoring System (<i>system demo</i>)	
Nancy Green	18
A Principled Representation of Attributive Descriptions for Generating Integrated Text and Information Graphics Presentations	
Brigitte Grote	128
Discourse Marker Choice in Sentence Planning	
Graeme Hirst	118
Generating Warning Instructions by Planning Accidents and Injuries	
Helmut Horacek	238
A Flexible Shallow Approach to Text Generation	
Martin Jansche	108
Abductive Reasoning for Syntactic Realization	
Kristiina Jokinen	158
Planning Dialogue Contributions with New Information	
Thomas Kamps	8
Communicative Goal-Driven NL Generation and Data-Driven Graphics Generation: An Architectural Synthesis for Multimedia Page Generation	
Jung Hee Kim	280
Circsum-Tutor: Content Planning in a Tutoring System (<i>system demo</i>)	
Esther Klabbers	292
GoalGetter: Generation of spoken soccer reports (<i>system demo</i>)	
Ralf Klabunde	108
Abductive Reasoning for Syntactic Realization	
Jörg Klein	8
Communicative Goal-Driven NL Generation and Data-Driven Graphics Generation: An Architectural Synthesis for Multimedia Page Generation	
Kevin Knight	248
The Practical Value of <i>N-grams</i> in Generation	
Alistair Knott	98
Experiments Using Stochastic Search for Text Planning	
.....	28
An Architecture for Opportunistic Text Generation	
Ichiro Kobayashi	228
The Multex Generator and its Environment: Application and Development	
Kevin Korb	148
Attention during Argument Generation and Presentation	
Tanya Korelsky	78
A New Approach to Expert System Explanations	
Tünde-Csilla Kovács	304
ROMVOX: Text-to-speech synthesis of Romanian (<i>system demo</i>)	
Irene Langkilde	248
The Practical Value of <i>N-grams</i> in Generation	

Guy Lapalme	58
Automatic Generation of Subway Directions: Saliency Gradation as a Factor for Determining Message and Form	
Benoit Lavoie	78
A New Approach to Expert System Explanations	
James C. Lester	2
Natural Language Generation Journeys to Interactive 3D Worlds	
Erwin Marsi	68
Introducing Maximal Variation in Text Planning for Small Domains	
Christian Matthiessen	228
The Multex Generator and its Environment: Application and Development	
Richard McConachy	148
Attention during Argument Generation and Presentation	
Daryl McCullough	78
A New Approach to Expert System Explanations	
David McDonald	38
Controlled Realization of Complex Objects by Reversing the Output of a Parser	
Chris Mellish	98
Experiments Using Stochastic Search for Text Planning	
.....	28
An Architecture for Opportunistic Text Generation	
Frédéric Meunier	284
FLAUBERT: User-friendly multilingual NLG (<i>system demo</i>)	
Johanna Moore	18
A Principled Representation of Attributive Descriptions for Generating Integrated Text and Information Graphics Presentations	
István Nagy	304
ROMVOX: Text-to-speech synthesis of Romanian (<i>system demo</i>)	
Sergei Nirenburg	48
De-Constraining Text Generation	
Jon Oberlander	98
Experiments Using Stochastic Search for Text Planning	
.....	28
An Architecture for Opportunistic Text Generation	
Mick O'Donnell	98
Experiments Using Stochastic Search for Text Planning	
.....	28
An Architecture for Opportunistic Text Generation	
Peter Poller	198
Toward Multilingual Protocol Generation for Spontaneous Speech Dialogues	
Richard Power	256
Generation as a Solution to its Own Problem	
.....	308
WYSIWYM: Knowledge editing with NL feedback (<i>system demo</i>)	
Owen Rambow	78
A New Approach to Expert System Explanations	
Teodora Ratiu	304
ROMVOX: Text-to-speech synthesis of Romanian (<i>system demo</i>)	
Klaus Reichenberger	8
Communicative Goal-Driven NL Generation and Data-Driven Graphics Generation: An Architectural Synthesis for Multimedia Page Generation	
Donia Scott	256
Generation as a Solution to its Own Problem	
.....	308
WYSIWYM: Knowledge editing with NL feedback (<i>system demo</i>)	

James Shaw	138
Clause Aggregation using Linguistics Knowledge	
Manfred Stede	128
Discourse Marker Choice in Sentence Planning	
Matthew Stone	178
Textual Economy through Close Coupling of Syntax and Semantics	
Hideki Tanaka	158
Planning Dialogue Contributions with New Information	
Murat Temizsoy	188
A Language-Independent System for Generating Feature Structures from Interlingua Representations	
Kazuhiro Teruya	228
The Multex Generator and its Environment: Application and Development	
Mariët Theune	292
GoalGetter: Generation of spoken soccer reports (<i>system demo</i>)	
Stuart G. Towns	2
Natural Language Generation Journeys to Interactive 3D Worlds	
Evelyne Viegas	48
De-Constraining Text Generation	
Qian Wang	296
MLWFA: Multilingual Weather Forecasting System (<i>system demo</i>)	
Leo Wanner	48
De-Constraining Text Generation	
Bonnie Webber	178
Textual Economy through Close Coupling of Syntax and Semantics	
Thomas Wehrle	288
GBGen: Large-scale domain-independent GB syntax (<i>system demo</i>)	
Michael White	266
EXEMPLARS: A Practical, Extensible Framework for Dynamic Text Generation	
Graham Wilcock	218
Approaches to Surface Realization with HPSG	
Shuly Wintner	276
Amalia: NLG with Abstract Machine(<i>system demo</i>)	
Canzhong Wu	228
The Multex Generator and its Environment: Application and Development	
Tianfang Yao	296
MLWFA: Multilingual Weather Forecasting System (<i>system demo</i>)	
Akio Yokoo	158
Planning Dialogue Contributions with New Information	
Diana Zaiu	304
ROMVOX: Text-to-speech synthesis of Romanian (<i>system demo</i>)	
Licheng Zeng	228
The Multex Generator and its Environment: Application and Development	
Dongmo Zhang	296
MLWFA: Multilingual Weather Forecasting System (<i>system demo</i>)	
Yujian Zhou	280
Circsum-Tutor: Content Planning in a Tutoring System (<i>system demo</i>)	
Michael Zock	58
Automatic Generation of Subway Directions: Saliency Gradation as a Factor for Determining Message and Form	
Ingrid Zukerman	148
Attention during Argument Generation and Presentation	

Papers