

## NIGEL WARD

6640 El Parque  
El Paso, Texas 79912  
phone/fax: +1 (915) 581-4869  
[nigelward@acm.org](mailto:nigelward@acm.org)  
<http://nigelward.com/>

Department of Computer Science  
University of Texas at El Paso  
El Paso, Texas 79968-1518

phone: +1 (915) 747-6827

### Research Interests

**Human-Computer Interaction, Spoken Dialog Systems** (Turn-Taking and Back-Channeling, Prosody, Language Modeling, Non-Lexical Utterances, Emotion in Speech), Computer-Mediated Communication, Cross-Cultural Communication, Cognitive Modeling, Teaching and Learning Applications

### Employment

2002 – present. **University of Texas at El Paso**, Computer Science Department, Associate Professor 2002 – 2010, Professor 2010 – present, Chair 2011 – present.

1992 – 2002. **University of Tokyo**, Department of Mechano-Informatics, Graduate School of Information Science and Technology and Faculty of Engineering. Lecturer 1992 – 1994, Associate Professor, 1994–2002.

1991 – 1992. **University of Tokyo**, Research Center for Advanced Science and Technology, Visiting Researcher.

### Education

Ph.D. in Computer Science. University of California at Berkeley, 1991.

B.S. with Honors, Computer and Communication Sciences; Mathematics. University of Michigan, Ann Arbor, 1983.

## RESEARCH: PUBLICATIONS

### BOOK

*A Connectionist Language Generator*. Nigel Ward. Ablex, 1994.

### JOURNAL ARTICLES

**Prosodic and Temporal Features for Language Modeling for Dialog**. Nigel G. Ward, Alejandro Vega, Timo Baumann. *Speech Communication* 54, pages 161-174, 2012.

**Achieving Rapport with Turn-by-Turn, User-Responsive Emotional Coloring**. Jaime C. Acosta, Nigel G. Ward. to appear, *Speech Communication*, 53, pages 1137-1148, 2011.

**American and Arab Perceptions of an Arabic Turn-Taking Cue**. Nigel G. Ward, Yaffa Al Bayyari. *Journal of Cross-Cultural Psychology*, 41, pages 270-275, 2010.

**Learning to Show You're Listening**. Nigel G. Ward, Rafael Escalante, Yaffa Al Bayyari, and Tamar Solorio. *Computer Assisted Language Learning*, 20, pages 385–407, 2007.

- Searching for Explanatory Web Pages Using Automatic Query Expansion.** Manabu Tauchi and Nigel Ward. *Computational Intelligence*, 23 (1), pp 3–14, 2007
- Towards a Model of Computer Science Graduate Admissions Decisions.** Nigel Ward. *Journal of Advanced Computational Intelligence and Intelligent Informatics*, 10, pp 372–383, 2006.
- Non-Lexical Conversational Sounds in American English.** Nigel Ward. *Pragmatics and Cognition*, 14 (1), 113–184, 2006.
- Automatic User-Adaptive Speaking Rate Selection.** Nigel Ward and Satoshi Nakagawa. *International Journal of Speech Technology*, 7, pp 235–238, 2004.
- A Tool for Taking Class Notes.** Nigel Ward and Hajime Tatsukawa. *International Journal of Human-Computer Studies*, 59 (6), pp 959–981, 2003.
- A Study in Responsiveness in Spoken Dialog.** Nigel Ward and Wataru Tsukahara. *International Journal of Human-Computer Studies*, 59, pp 603–630, 2003.
- Adaptive Number-Giving for Directory Assistance (in Japanese).** Satoshi Nakagawa and Nigel Ward. *Human Interface Society*, 5 (1), pp 391–396, 2003.
- Responding to Subtle, Fleeting Changes in the User’s Internal State.** Wataru Tsukahara and Nigel Ward. *CHI Letters* 3 (1), 2001. pp 77–84; also CHI 2001 Conference on Human Factors in Computing Systems.
- A Design for a Wearable Translation Device.** Jani Patokallio and Nigel Ward. *Human Interface*, 3 (3) pp 5–10. 2001.
- Prosodic Features which Cue Back-channel Responses in English and Japanese.** Nigel Ward and Wataru Tsukahara. *Journal of Pragmatics*, 32, pp 1177–1207, 2000.
- Artificial Intelligence and Other Approaches to Speech Understanding: A case study in methodology.** Nigel Ward. *Journal of Experimental and Theoretical Artificial Intelligence*, 10, pp 487–493, 1998.
- Responsiveness in Dialog and Priorities for Language Research.** Nigel Ward. *Systems and Cybernetics*, special issue on Embodied Artificial Intelligence and Artificial Life, 28 (6), pp. 521–533, 1997.
- A Parallel Approach to Syntax for Generation.** Nigel Ward. *Artificial Intelligence*, 57, pp. 183–225, 1992.
- Some Neglected Aspects of the Generation Task.** Nigel Ward. *Computational Intelligence*, 8 (1), pp. 161–171, 1992.

#### REFEREED CONFERENCE PAPERS

- Dialog Prediction for a General Model of Turn-Taking.** Nigel G. Ward, Olac Fuentes, Alejandro Vega. Interspeech 2010.
- Lexico-Prosodic Anomalies in Dialog.** Nigel G. Ward, Alejandro Vega and David G. Novick. Speech Prosody 2010.
- Using Subtle Prosodic Variation to Acknowledge the User’s Current State.** Nigel G. Ward, Rafael Escalante-Ruiz. Interspeech 2009.
- Estimating the Potential of Signal and Interlocutor-Track Information for Language Modeling.** Nigel G. Ward, Benjamin H. Walker. Interspeech 2009.
- Responding to User Emotional State by Adding Emotional Coloring to Utterances.** Jaime C. Acosta, Nigel G. Ward. Interspeech 2009.

- Modeling the Effects of Time-Into-Utterance on Word Probabilities.** Nigel G. Ward and Alejandro Vega. Interspeech 2008.
- Factors Affecting Speaking-Rate Adaptation in Task-Oriented Dialogs.** Nigel G. Ward and S. Kumar Mamidipally. Speech Prosody 2008.
- Prosodic Features that Cue Back-Channel Feedback in Northern Mexican Spanish.** Anais G. Rivera and Nigel G. Ward. *Proceedings of the Seventh Annual High Desert Linguistics Society Conference*, University of New Mexico, 2008.
- Looking for Telecommunication Channel Preference Differences between Bystanders and Talkers.** Nigel G. Ward, Anais G. Rivera and Alejandro Vega. Human Factors in Telecommunications 2008.
- A Case Study in the Identification of Prosodic Cues to Turn-Taking: Back-Channeling in Arabic.** Nigel Ward and Yaffa Al Bayyari. Interspeech 2006.
- Prosodic Feature Generation for Back-channel Production.** Thamar Solorio, Olac Fuentes, Nigel Ward, Yaffa Al Bayyari. Interspeech 2006.
- Root Causes of Lost Time and User Stress in a Simple Dialog System.** Nigel G. Ward, Anais G. Rivera, Karen Ward, David G. Novick. Interspeech 2005.
- Training Wheels for the Command Line.** David Herrera and Nigel Ward. 11th International Conference on Human-Computer Interaction, 2005.
- Dealing with Uncertainty in a Model of Computer Science Graduate Admissions Decisions.** Nigel Ward. Fifth International Conference on Intelligent Technologies, 2004.
- Pragmatic Functions of Prosodic Features in Non-Lexical Utterances,** Nigel Ward, Speech Prosody, 2004.
- Nasalization in Japanese Back-Channels bears Meaning** Masafumi Okamoto and Nigel Ward, International Congress of the Phonetic Sciences, 2003.
- Designing A Tool for Taking Lecture Notes,** Nigel Ward and Hajime Tatsukawa, Human-Computer Interaction International Conference 2003.
- Software for Taking Notes in Class.** Nigel Ward and Hajime Tatsukawa, Frontiers in Education 2003.
- Automatic User-Adaptive Speaking Rate Selection for Information Delivery.** Nigel Ward and Satoshi Nakagawa. International Conference on Spoken Language Processing, 2002.
- Can Confidence Scores Help Users Post-Editing Speech Recognizer Output?** Taku Endo, Nigel Ward and Minoru Terada. International Conference on Spoken Language Processing, 2002.
- Conversational Grunts and Real-time Interaction.** Nigel Ward. International Conference on Speech Processing. 2001.
- Searching for Explanatory Web Pages using Query Expansion.** Manabu Tauchi and Nigel Ward. Pacific Association for Computational Linguistics (PACLING) 2001.
- Design for a System able to use Time-Critical Spoken Advice.** Shunsuke Soeda and Nigel Ward. Fifteenth National Conference of the Japanese Society for Artificial Intelligence, 2001.
- Automatic Tuning of Terminology Queries to Search Engines.** (in Japanese). Manabu Tauchi and Nigel Ward. 7th Meeting of the (Japanese) Association for Natural Language Processing, 2001.
- The Challenge of Non-Lexical Speech Sounds.** Nigel Ward. International Conference on Spoken Language Processing, 2000.

**Evaluating Responsiveness in Spoken Dialog Systems.** Wataru Tsukahara and Nigel Ward. International Conference on Spoken Language Processing, 2000.

**Pacing Spoken Directions to Suit the Listener.** Tatsuya Iwase and Nigel Ward. International Conference on Spoken Language Processing, 1998.

**The Relationship between Sound and Meaning in Japanese Back-channel Grunts.** Nigel Ward. 4th Meeting of the (Japanese) Association for Natural Language Processing, 1998.

**Using Prosodic Clues to Decide When to Produce Back-channel Utterances.** Nigel Ward. International Conference on Spoken Language Processing, 1996.

**Artificial Intelligence and Other Approaches to Speech Understanding: A case study in methodology.** Nigel Ward. Tenth National Conference of the Japanese Society for Artificial Intelligence, 1996. pages 403–406,

**A Lightweight Parser for Speech Understanding.** Nigel Ward. International Conference on Spoken Language Processing, 1994.

**Towards Unrestricted Syntax for Speech Understanding.** Nigel Ward. 48th National Conference, Information Processing Society of Japan, 1994.

**An Alternative to Deep Case for Representing Meaning Relations.** Nigel Ward. International Conference on Computational Linguistics (COLING-92), 1992.

**Decomposing Deep Cases.** Nigel Ward. 43rd National Conference, Information Processing Society of Japan, 1991.

**A Connectionist Treatment of Grammar for Generation.** Nigel Ward. *Proceedings of the Twelfth Cognitive Science Conference*, Lawrence Erlbaum Associates, 1990.

**Capturing Intuitions about Human Language Production.** Nigel Ward. *Proceedings of the Eleventh Cognitive Science Conference*, Lawrence Erlbaum Associates, Hillsdale, New Jersey, 1989.

**On the Ordering of Decisions in Machine Translation.** Nigel Ward. Third National Conference of the Japanese Society for Artificial Intelligence, 1989.

**A Model for Natural Machine Translation.** Nigel Ward. 38th National Conference, Information Processing Society of Japan, 1989.

**Issues in Word Choice.** Nigel Ward. International Conference on Computational Linguistics (COLING-88), 1988.

#### REFEREED SYMPOSIUM AND WORKSHOP PAPERS

**Temporal Distributional Analysis.** Nigel G. Ward. Semdial Workshop on the Semantics and Pragmatics of Dialogue, 2011.

**The Challenge of Modeling Dialog Dynamics.** Nigel G. Ward. Workshop on Modeling Human Communication Dynamics, at Neural Information Processing Systems 2010

**Towards the Use of Inferred Cognitive States in Language Modeling,** Nigel Ward and Alejandro Vega, IEEE Workshop on Automatic Speech Recognition and Understanding, 2009.

**A Framework for Model-based Evaluation of Spoken Dialog Systems.** Sebastian Möller and Nigel Ward. 9th Sigdial Workshop on Discourse and Dialogue, 2008.

**Differences Between Americans and Arabs in the Production and Interpretation of Verbal and Non-verbal Dialogue Behavior.** Maria L. Flecha-Garcia, David G. Novick, and Nigel G. Ward. Speech and Face to Face Communication Workshop, pp 47–48, 2008.

**A Combined Method for Discovering Short-Term Affect-Based Response Rules for Spoken Tutorial Dialog.** Tasha Hollingsed and Nigel Ward. Workshop on Speech and Language Technology in Education (SLaTE) 2007.

**Evaluating Real-Time Responsiveness in Dialog.** Nigel G. Ward. Interspeech 2006 Satellite Workshop: Dialogues on Dialogues: Multidisciplinary Evaluation of Advanced Speech-Based Interactive Systems.

**On the Expressive Competencies Needed for Responsive Systems,** Nigel Ward. Workshop on Subtle Expressivity for Characters and Robots at CHI 2003.

**Machine Translation in the Mobile and Wearable Age,** Nigel Ward. Machine Translation Roadmap Workshop at TMI-MT. 2002.

**A Tool for Taking Lecture Notes** (in Japanese). Hajime Tatsukawa and Nigel Ward. Interaction 2002, Information Processing Society of Japan. 2002.

**An Analysis of Lecture Notes and a System for Note-taking** (in Japanese). Hajime Tatsukawa and Nigel Ward. Workshop on Interactive Systems and Software (WISS). 2001.

**A Wearable Cross-Language Communication Aid.** Jani Patokallio and Nigel Ward. International Symposium on Wearable Computing. 2001.

**Issues in the Transcription of English Conversational Grunts.** Nigel Ward. 1st SIGdial Workshop on Discourse and Dialogue. ACL. 2000

**Requirements for a Socially Aware Free-standing Agent.** Nigel Ward and Takeshi Kuroda. Proceedings of the Second International Symposium on Humanoid Robots, 108–114, 1999.

**Low-Pitch Regions as Dialog Signals? Evidence from Dialog-Act and Lexical Correlates in Natural Conversation.** Nigel Ward. European Speech Communication Association (ESCA) Workshop on Dialogue and Prosody. 1999.

**Some Exotic Discourse Markers of Spoken Dialog.** Nigel Ward. Association for Computational Linguistics, Workshop on Discourse Relations and Discourse Markers, 1998.

**A Simple Rule for Cooperative Timing of Utterances in Spoken Dialog.** Nigel Ward. IJCAI-97 Workshop on Collaboration, Cooperation and Conflict in Dialogue Systems, 1997.

**A Responsive Dialog System.** Nigel Ward and Wataru Tsukahara. First International Workshop on Human-Computer Conversation, 1997.

**Reactive Responsiveness in Dialog.** Nigel Ward. AAAI Fall Symposium on Embodied Cognition and Action, 1996.

**An Approach to Tightly-Coupled Syntactic/Semantic Processing for Speech Understanding.** Nigel Ward. AAAI Workshop on the Integration of Natural Language and Speech Processing, 1994.

**On the Role of Syntax in Speech Understanding.** Nigel Ward. Proceedings of the International Workshop on Speech Processing (also Technical Report SP93-76, IEICE), 1993.

**A Connectionist Treatment of Grammar for Generation: Relying on Emergents.** Nigel Ward. Proceedings of the Fifth International Workshop on Natural Language Generation, 1990.

**An Open Design for Generation.** Nigel Ward. Proceedings of the AAAI Workshop on Text Planning and Generation, 1988.

**A Prosodic Feature that Invites Back-Channels in Egyptian Arabic.** Nigel Ward and Yaffa Al Bayyari, *Perspectives in Arabic Linguistics XX*, Mustafa Mughazy, ed., 187-206 John Benjamins, 2007.

**Shrdlu.** Nigel Ward. in *Encyclopedia of Cognitive Science*, Nature Publishing Group, 2002.

**Machine Translation.** Nigel Ward and Daniel Jurafsky. in *Speech and Language Processing, 1st Edition*, by Daniel Jurafsky and James H. Martin, 720–751. Prentice-Hall, 2000

**A Responsive Dialog System.** Nigel Ward and Wataru Tsukahara. in *Machine Conversations*, edited by Yorick Wilks, 169–174. Kluwer, 1999.

#### MAGAZINE ARTICLES

**Akanbe~ (nyah-nyah-nyah-nyah-nyah)** (in Japanese). Nigel Ward. *Gengo*, March 2004.

**Moving Note-taking into the Digital Age.** Nigel Ward. *Syllabus*. October 2003.

**ndakko (mbye)** (in Japanese). Nigel Ward. *Nihongo Gaku*, April 2002.

**Back-channel Feedback as a Reflex Phenomenon.** (in Japanese) Wataru Tsukahara and Nigel Ward, *Gengo*, September 1997.

#### TECHNICAL REPORTS

**Visualization to Support the Discovery of Prosodic Contours Related to Turn-Taking.** Nigel G. Ward, Joshua L. McCartney. Technical Report UTEP-CS-10-24.

**Studies in the Use of Time Into Utterance as a Predictive Feature for Language Modeling.** Alejandro Vega, Nigel G. Ward. Technical Report UTEP-CS-10-22.

**Looking for Entropy Rate Constancy in Spoken Dialog.** Alejandro Vega, Nigel G. Ward. Technical Report UTEP-CS-09-19.

**Additional Information about American and Arab Perceptions of an Arabic Turn-Taking Cue.** Nigel Ward and Yaffa Al Bayyari. University of Texas at El Paso Technical Report UTEP-CS-08-34

**Testing the Value of a Time-based Language Model for Speech Recognition.** Nisha Kiran and Nigel G. Ward. University of Texas at El Paso Technical Report UTEP-CS-08-29.

**Reasons why Mobile Telephone Conversations may be Annoying: Considerations and Pilot Studies.** Nigel G. Ward, Anais G. Rivera and Alejandro Vega. University of Texas at El Paso Technical Report UTEP-CS-07-60, 2007.

**Three Prosodic Features that Cue Back-Channel Feedback in Northern Mexican Spanish.** Anais G. Rivera and Nigel G. Ward. University of Texas at El Paso Technical Report UTEP-CS-07-12, 2007.

**Detecting Filled Pauses in Tutorial Dialogs.** Gaurav Garg and Nigel G. Ward. University of Texas at El Paso Technical Report UTEP-CS-06-32, 2006.

**Automatic Labeling of Back Channels.** Udit Sajjanhar and Nigel G. Ward. University of Texas at El Paso Technical Report UTEP-CS-06-26, 2006.

**The UTEP Corpus of Iraqi Arabic.** Nigel Ward, David Novick, and Salamah I. Salamah. University of Texas at El Paso Technical Report UTEP-CS-06-02, 2006.

**Some Usability Issues and Research Priorities in Spoken Dialog Applications.** Nigel Ward, Anais Rivera, Karen Ward, and David Novick. University of Texas at El Paso Technical Report UTEP-CS-05-23, 2005.

**A Model of Computer Science Graduate Admissions Decisions.** University of Texas at El Paso Technical Report UTEP-CS-04-30, 2004.

**Non-Lexical Conversational Sounds in American English.** University of Texas at El Paso Technical Report UTEP-CS-04-22, 2004.

**A Flexible, Parallel Model of Natural Language Generation.** University of California at Berkeley Technical Report UCB/CSD 91/629.

#### NON-REFEREED WORKSHOP PAPERS

**Quantitative Estimation of the Meanings of the Phonetic Components of Back-channels** (in Japanese). Masafumi Okamoto and Nigel Ward. 35th Spoken Language Understanding and Discourse Workshop, 2002.

**Adding Audio Fields to Web Pages** (in Japanese). Hiroyuki Maeda and Nigel Ward. Interaction 2002, Information Processing Society of Japan.

**On the Combination of Pen and Keyboard for Note-taking.** (in Japanese). Hajime Tatsukawa and Nigel Ward. 63rd Workshop on Computers and Education, Information Processing Society of Japan. 2002.

**Automatic User-Adaptive Speaking Rate Selection for Information Delivery.** Nigel Ward and Satoshi Nakagawa. Symposium on Prosody and Speech Processing. Tokyo 2002.

**A Study in User-Adaption for Interactive Voice Response** (in Japanese). Satoshi Nakagawa and Nigel Ward. 97th Human Interface Workshop, Information Processing Society of Japan, 2002.

**Displaying Speech Recognition Confidence Information to Support User Correction of Misrecognitions** (in Japanese). Taku Endo, Nigel Ward and Minoru Terada. 38th Spoken Language Processing Workshop, Information Processing Society of Japan. 2001.

**An Alternative Character-Input Device using Up-down and Lateral Motions for Each Finger.** (in Japanese) Amane Torii and Nigel Ward. Interaction 2001 (87th Human Interface Workshop), Information Processing Society of Japan. 2001.

**Hard-Realtime Communication between Human and Computer using Non-Verbal Information.** (in Japanese). Shunsuke Soeda and Nigel Ward. Interaction 2001 (87th Human Interface Workshop), Information Processing Society of Japan. 2001.

**Three-dimensional Display of Directory Structure to Support Users Tidying up Files.** (in Japanese) Keisuke Nishimoto and Nigel Ward. Interaction 2001 (87th Human Interface Workshop), Information Processing Society of Japan. 2001.

**Evaluating the Effectiveness of Subtle Choices in Acknowledgements in Japanese based on Prosodic Cues and Context.** (in Japanese). Wataru Tsukahara and Nigel Ward. 34th Spoken Language Processing Workshop, Information Processing Society of Japan. 2000.

**Evaluating Information-Giving Chatterbots** (in Japanese). Tatsuya Iwase and Nigel Ward. Interaction 2000 (87th Human Interface Workshop), Information Processing Society of Japan. 2000.

**A Responsive Dialog System.** Nigel Ward and Wataru Tsukahara. Interaction97 (Information Processing Society of Japan), 1997.

**Second Thoughts on an Artificial Intelligence Approach to Speech Understanding.** Nigel Ward. Japanese Society for Artificial Intelligence, 14th Spoken Language Understanding and Discourse Workshop, 1996.

**In Japanese a Low Pitch Region Means “Back-channel Feedback Please”.** Nigel Ward. Information Processing Society of Japan, 11th Spoken Language Processing Workshop, 1996.

**The Application of a Lightweight Parser in Speech Understanding.** Nigel Ward. Information Processing Society of Japan, Spoken Language Processing Workshop, 1994.

**An Evidential Model of Syntax for Understanding.** Nigel Ward. Information Processing Society of Japan, Natural Language Working Group, Technical Report 88-3, 1992.

**Towards Natural Machine Translation.** Nigel Ward. Institute of Electronics, Information, and Communication Engineers, Artificial Intelligence Working Group, Technical Research Report AI89-30, 1989.

## BOOK REVIEWS

Review of *Speech-to-Speech Translation: A Massively Parallel Memory-based Approach*, Hiroaki Kitano. reviewed in *Computational Linguistics*, 21(4), 1995.

Review of *Natural Computation*, Whitman Richards. reviewed in *AI Magazine*, 13(2), 1992.

Review of *Machine Translation: Past, Present, Future*, William John Hutchins. reviewed in *AI Magazine* 10(1), 1989.

Review of *Computer Translation of Natural Language*, Walter Goshawke, D. K. Kelly and J. D. Wigg. reviewed in *ACM Computing Reviews*, 29(12), 1988.

Review of *Computation and Cognition: Toward a Foundation for Cognitive Science*, Zenon Pylyshyn. reviewed in *Artificial Intelligence* 33, 1987.

Review of *Induction: Processes of Inference, Learning, and Discovery*, John H. Holland, Keith J. Holyoak, Richard E. Nisbett, and Paul R. Thagard. reviewed in *ACM Computing Reviews*, 28(4), 1987.

Review of: *Deep and Superficial Parsing*, Yorick Wilks. reviewed in *ACM Computing Reviews*, 28(12), 1987.

Review of *Automatic Natural Language Parsing*, Karen Sparck Jones and Yorick Wilks, eds. reviewed in *SIGART Newsletter*, Number 98, 1986.

Review of: *Relevant Criteria for Choosing an Inference Engine in Expert Systems*. Hans Reichgelt and Frank van Harmelen. reviewed in *ACM Computing Reviews*, 27(11), 1986.

Review of: *Conceptual Clustering of Structured Objects: A Goal-Oriented Approach*. Robert E. Stepp and Ryszard S. Michalski, reviewed in *ACM Computing Reviews*, 27(9) 1986.

<b>RESEARCH: GRANTS</b>
-------------------------

As PI:

*Time-Based Language Modeling*, National Science Foundation (IIS), 2009-2012, \$499,606.

*Developing Models of Back-Channel Behavior and Evaluation Metrics*, subcontract to USC Institute for Creative Technologies, 2008–2009, \$39,000.

*Back-Channel Behaviors and Perceptions of Rapport*, subcontract to USC Institute for Creative Technologies, 2007–2008, \$38,000.

*Beyond Words: Identification of Back-Channel Communication Rules in Arabic and Development of Training Methods*, DARPA (subcontract to USC ISI), 2005-2007. \$419,876.

*Modeling Real-Time Interpersonal Interaction in Spoken Communication*, Principal Investigator, National Science Foundation, 2004–2009. \$506,878, including supplements.

(105¥  $\simeq$  \$1)

*A Wearable System to Support Cross-Language Communication*, (Principal Investigator), 1,000,000¥. Casio Foundation, 2001–2002.

*Prosodic Aspects of Sub-lexical Utterances*, 2,800,000¥ for F2000, 2,850,000¥ for F2001, as a subcontract of the Specific Area B Grant on “Prosodic Control for High Quality Speech Synthesis”, Ministry of Education, Japan, F2000–2003.

*A Conversational-Reflex Training System for Second Language Learners*. (Principal Investigator), 2,100,000¥. Specific Area A Grant, Ministry of Education, Japan, F2000.

*User-Adaptive Information Delivery by Voice* (Principal Investigator) 1,700,000¥. International Communications Foundation, Tokyo, Japan, F1999-2002

*Fleeting Facial Expressions in Dialog* (Principal Investigator) 1,000,000¥. Okawa Foundation for Information and Telecommunications, Japan, F1999-2000

*Paralinguistic Information as a New Interface Modality for Information Delivery Systems* (Principal Investigator) 2,500,000¥. Fundamental Research Grant, Ministry of Education, Japan, F1999-2000

*The Acoustic and Meaning Components of Grunts* (Principal Investigator) 800,000¥. Inamori Foundation, Kyoto, Japan, F1998-1999.

*A System to Assist Rote Learning* (Principal Investigator) 3,000,000¥. Hayao Nakayama Foundation, Tokyo, Japan, F1997.

*A Basic Study of Grunts in Communication* (Principal Investigator) 1,000,000¥. Sound Technology Promotion Foundation, Tokyo, Japan, F1996.

*Training Fingers for Machinery Operation using Real Time Responsive Spoken Instruction* (Principal Investigator), 1,100,000¥. Young Researcher Development Grant, Ministry of Education, Japan, F1996.

*Learning Control for the Integration of Multiple Knowledge Sources and Semantic Feedback for Speech Understanding* (Principal Investigator), 1,400,000¥, Priority Research Area Grant, Ministry of Education, Japan, F1995.

*Exploiting Speech Understanding in Intelligent Interfaces* (in cooperation with the International Computer Science Institute) (Principal Investigator), 4,200,000¥, International Cooperation Grant, Ministry of Education, Japan, F1994-1995.

*A Speech Dialog System Incorporating a Parallel Evidential Inferential Understanding Component* (Principal Investigator), 1,900,000¥, Priority Research Area Grant, Ministry of Education, Japan, F1994.

*Semantic Feedback for Speech Understanding in Man-Machine Interfaces* (Principal Investigator), 900,000¥, Young Researcher Development Grant, Ministry of Education, Japan, F1994.

*Parallel Syntactic Hypotheses for Speech Understanding* (Principal Investigator), 500,000¥, Artificial Intelligence Promotion Foundation, Nagoya, Japan, F1993.

Travel Grant, 150,000¥, Hara Research Foundation, Osaka, Japan, 1992.

As Co-PI:

*Effectiveness of Visualization to Improve Public Participation in Transportation Planning*, PI Ruy L. Cheu. Federal Highway Administration, 2008-2009. \$82,961,

*Active Listening and Trust Across Cultures*, PI David Novick, Department of Defense, 2007–2009, \$181,264.

*Friendly Artifact: Research on a Machine for Observing, Understanding, and Responding to Human Behavior*, PI N. Nakajima, 1996–1999, 55,000,000¥

<b>RESEARCH: PRESENTATIONS</b>
--------------------------------

#### INVITED CONFERENCE AND WORKSHOP TALKS

**Ten Questions about Back-Channels, and Some Incomplete Answers**, Workshop on Cross-cultural and Culture-specific Aspects of Conversational Backchannels and Feedback. University of Southern California, Institute for Creative Technologies, December 2006.

**Conversational Grunts and Real-time Interaction**. International Conference on Speech Processing. Taejon, Korea. 2001.

**Ephemeral Emotions and Responsiveness in Dialog**. Institute of Electronics, Information, and Communication Engineers, Thought and Language Group. Tokyo. 2001.

**Back-channel Feedback as a Reflex Phenomenon**. 17th Annual Conference of the Semiotics Society of Japan. Tokyo. 1997.

**Second Thoughts on an Artificial Intelligence Approach to Speech Understanding**. Workshop on Computational Models of Human Syntactic Processing. Wassenaar, The Netherlands, June 1996.

**A Parallel Approach to Syntax for Generation**. Workshop on Computational Models of Human Syntactic Processing. Wassenaar, The Netherlands, June 1996.

#### REFEREED PRESENTATIONS (without papers)

**Differences between Americans and Arabs in the Production and Interpretation of Verbal and Non-verbal Dialogue Behavior**. Maria L. Flecha-Garcia, David G. Novick and Nigel G. Ward. Speech and Face to Face Communication Workshop, 2008, Grenoble

**Studies in Cross-Cultural Interpretations of Back-Channeling Behavior**. Yaffa Al Bayyari and Nigel Ward. 2008 Meeting of the Society for Cross-Cultural Research.

**Active Listening and Trust across Cultures**. Behavioral Scientists Workshop. DoD. Oct 2007.

**The Role of Gesture in Inviting Back-Channels in Arabic**. Yaffa Al Bayyari and Nigel Ward. 10th Meeting of the International Pragmatics Association, 2007.

**Learning to Show You're Listening: A Back-Channel Trainer for Arabic** Rafael Escalante, Nigel G. Ward, Yaffa Al Bayyari and Tamar Solorio. Calico 2007.

**A Combined Method for Discovering How to Detect and Respond to the Learner's Short-term Affective States**. Tasha Hollingsed and Nigel Ward. Society for Personality and Social Psychology, 2007.

**A Prosodic Feature that Invites Back-Channels in Egyptian Arabic**. Nigel Ward and Yaffa Al Bayyari, 20th Arabic Linguistics Symposium, 2006.

**Moving Note-taking into the Digital Age**, Nigel Ward and Hajime Tatsukawa, Syllabus — Technology for Higher Education 2003.

**Sound Symbolism in *uh-huh*, *uh-hn*, *mm*, *uh* and the like**. Nigel Ward. paper given at the Annual Meeting of the Linguistic Society of America, January 2001

**Inferring Processing Times from a Corpus of Conversations** Nigel Ward. poster presented at the First Conference on Computational Psycholinguistics, August 1997

**Theoretical Chastity and Technical Promiscuity in Connectionist Studies of Natural Language.** AAAI Spring Symposium: Connectionist Natural Language Processing, March 1991.

#### COLLOQUIUM AND SEMINAR PRESENTATIONS

**Prosody and Prediction for Dialog Systems, and in Particular for Language Modeling, Adaptation and Turn-Taking.** Carnegie Mellon University, Language Technologies Institute, November 2010.

**Modeling Spoken Dialog as a Process in Time.** UTEP Linguistics Colloquium, September 2008.

**Talking to Computers.** 3rd NMSU-UTEP Workshop on Mathematics and Computer Science, April 2008.

**Learning to Show You're Listening: A Trainer for Back-Channeling in Arabic.** University of Southern California, Institute for Creative Technologies, October 2006.

**Learning to Show You're Listening: A Trainer for Back-Channeling in Arabic.** University of Pittsburgh, Natural Language Processing Laboratory, September 2006.

**A Prosodic Feature that Invites Back-Channels in Egyptian Arabic.** UTEP Linguistics Symposium, February 2005.

**A Tool for Taking Lecture Notes.** Wayne State University, Library and Information Science Program, March 2002.

**Sub-second Usability: Five Systems Supporting Human Communication.** University of Texas at El Paso, February 2002.

**Building Responsive Systems: Successes and Failures.** University of Texas at El Paso, February 2002.

**Towards a Model of When to Say Uh-huh, Uh-hn, Mm, etc.** University of California Santa Cruz, Cognitive Psychology Lecture Series, October 1998.

**Back-channel Feedback and Spoken Dialog Systems.** University of Tokyo Saturday Talks on Cognitive Themes, October 1996.

**Sense, Nonsense, and Computer Conversation.** Keio University Philosophy Department Lecture Series, Tokyo, July 1996.

**On the Role of Syntax in Speech Understanding. Information and Cognition Seminar Series.** Waseda University, Tokyo, December 1993.

**Towards Natural Machine Translation.** NTT, Yokosuka, Japan, May 1989.

**Towards Natural Machine Translation.** ATR, Kyoto, April 1989.

#### WORKSHOP PRESENTATIONS, ETC. (without papers)

**Dialog Prediction for a General Model of Turn-Taking.** USC-UTEP Workshop on Predictive Models of Human Communication Dynamics, Institute for Creative Technologies, Los Angeles, August 2010.

**Graduate School Admissions Decisions and the Assessment of Student Mastery.** Roundtable Discussion, organized by Nigel Ward and Charles Ambler. The Sun Conference on Teaching and Learning, March 2005.

**A Tool for Taking Class Notes.** El Paso del Norte Software Association. April 2004.

**Real-Time Social Skills and Responsiveness in Dialog.** Social Resonance Workshop, CSLR, University of Colorado. November 2003.

**A Conversational Reflex-training System for Second Language Learners.** Multimedia Education Specific Research Project Meeting. Tokyo, Japan. January 2001.

**A Wearable Translation Device.** Multimedia Education Specific Research Project Meeting. Tokyo, Japan. October 2000.

**In Japanese a Low Pitch Region Means “Back-channel Feedback Please”.** 2nd Meeting of the Information Integration Working Group of the Japan Society for Artificial Intelligence. Tsukuba, Japan, November 1996.

**Using Prosodic Clues to Decide When to Produce Back-channel Utterances.** Spoken Dialog Priority Research Project Meeting, Tokyo, February 1996.

**Lessons to Learn from the Artificial Intelligence Approaches to Speech Understanding of the 1970s.** Spoken Dialog Priority Research Project Meeting, Yufuin, October 1995.

**Second Thoughts re Speech Understanding.** Spoken Dialog Priority Research Project Meeting, Kyoto, June 1995.

**Corpora for Spoken Language Research.** panelist. Spoken Dialog Priority Research Project Meeting, Atami, December 1994.

**The Spoken Language Understanding Mini-challenge.** Spoken Dialog Priority Research Project Meeting, Atami, December 1994.

**Future Directions for NLP.** panelist. International Workshop on Future Generations of Natural Language Processing, Kyoto, July 1991.

**Towards Natural Machine Translation.** Fujitsu KSA Forum, Iizuka, Japan, May 1989.

#### OTHER TALKS

Figuring out Graduate School Admissions. UTEP ACM Student Chapter, October 2004.

Towards Natural Machine Translation. Toshiba, Kawasaki, June 1989.

Towards Natural Machine Translation. AIUEO, Tokyo, March 1989.

#### SYSTEM DEMONSTRATIONS

**A Prototype Dialog Predictor.** Nigel Ward, Alejandro Vega, Olac Fuentes and Shreyas Karkhedkar. Interspeech 2010.

**Using Emotion to Gain Rapport in a Spoken Dialog System.** Jaime C. Acosta and Nigel Ward. Interspeech 2009.

**A Software Suite for Learning Arabic Back-Channel Behaviors.** Rafael Escalante and Nigel Ward. Workshop on Speech and Language Technology in Education (SLaTE) 2007.

**Aizula, A Back-channeling System for English and Japanese.** ELSNet Speech System Olympics, at Eurospeech 1997.

<b>RESEARCH: OTHER</b>
------------------------

#### VISITING POSITION

**University of California at Santa Cruz**, Perceptual Science Laboratory. Visiting Professor, 1998–1999.

#### PUBLIC DOMAIN SOFTWARE

**The Acceptance Estimator for Computer Science Graduate Admissions Decisions.** 2004

**Didi**, a Dialog Display and Analysis Tool. 2003

**Pstone**, a Tool for Teaching Context-Free Grammar Writing. 2000

**The Spoken Language Understanding Mini-Challenge.** 1995

**The Lotec Speech Recognition System, version 2.** 1995.

**The Lotec Speech Recognition System.** 1994. (also in the Artificial Intelligence Collection, Volume 2, Prime Time Freeware, 1994)

**minitoc.sty**, version 1. 1990. (revised version by Daniel Jurafsky and Jean-Pierre Drucbert in the TeTeX distribution, 1993, revised 2006).

#### DATA COLLECTION

**The UTEP Corpus of Iraqi Arabic**, audio data in 6 CDs. archived by the Special Collections Department of the University of Texas at El Paso Library. Nigel G. Ward, David G. Novick and Salamah I. Salamah. 2006.

#### DOCTORAL THESES SUPERVISED

**Using Emotion to Gain Rapport in a Spoken Dialog System.** Jaime C. Acosta, University of Texas at El Paso, 2009.

**Acknowledgment Selection based on Context and the User's Prosody for a Responsive Spoken Dialog System** (in Japanese). Wataru Tsukahara. University of Tokyo. 2000.

#### AWARDS

Best Paper Award, PACLING (Pacific Computational Linguistics Conference), 2001

Kokuhi Fellowship (Japanese Government, Monbusho), 1988–1989.

National Science Foundation Graduate Fellowship, 1983–1986.

#### AWARDS WON BY ADVISEES

Alejandro Vega. Honorable Mention. Computing Research Association Outstanding Undergraduate Research Awards 2010.

Jaime C. Acosta. University Outstanding Dissertation Award for 2009 (UTEP). ACTEDS (Army Civilian Training, Education and Development System) award (covering full tuition for the duration of studies, plus one year of paid leave to work full time on Ph.D. research), 2008; Summer Internship at the University of Pittsburgh LearnLab, 2008; Graduate School Banner Bearer for the Spring 2007 Commencement.

Rafael Escalante. Scholarship to attend the NAACL Summer School in Human Language Technology, 2007.

<b>TEACHING</b>
-----------------

## COURSES TAUGHT (some team-taught)

Human-Computer Interaction. University of Texas at El Paso, 2002 – 2010.

Spoken Dialog Systems. UTEP graduate course, 2006, 2008, 2010.

Search Engine Technologies. UTEP graduate course, 2007, 2009

Statistical Natural Language Processing. UTEP graduate course, 2003.

Advanced Object-Oriented Programming, UTEP, 2011.

Compilers and Interpreters. UTEP 2003 – 2005.

Junior Professional Orientation. UTEP 2005.

Introduction to Computer Science. UTEP 2003.

Agent Systems. University of Tokyo graduate course. 2001.

Natural Language Processing. UT graduate course. 1992 – 1994, 1996, 1997, 1999.

Topics in Cognitive Science. UT graduate course. 1993, 1995.

Software Laboratory. UT (new course). 1997, 1999, 2000.

Artificial Intelligence Programming and Software Engineering. UT, 1996, 1997, 1999, 2000, 2001.

Engineering-Software Literacy. UT (new course). 2000 (coordinator)

Theory of Computation. UT, 1992 – 1997, 1999, 2000.

Programming Tools and Operating Systems Concepts. UT. 1998.

LISP and Applications. UT, 1992 – 1995.

Hands-on Junior Seminar. UT ( “Functionality and Content for a Multimodal Agent” 2000; “Build a Chatterbot for the Mech Home Page” 1999; “Build a Web Service” 1996; “Build a User Interface with Back-channels” 1995; “Build a Minimal Real-time Software Agent” 1994; “Build a Game Playing Program” 1992, 1993)

Artificial Intelligence (as TA). UC Berkeley, 1986.

Compilers (as TA). UC Berkeley, 1985.

## TUTORIALS, SHORT COURSES

Introduction to Connectionism. three lectures, University of Science and Technology of China, Hefei, October 1992.

Machine Translation Tutorial, Conference on Computer Processing of Chinese and Oriental Languages, Toronto, August 1988.

Introduction to LISP. one week intensive course at AT&T Bell Laboratories, as a Consultant for Franz Inc. 1987, 1988.

## GUEST LECTURES

- Usability Evaluation. in Graduate Ergonomics. 2004–2009.
- Research Methods in Human-Computer Interaction. in Graduate Research Methods. 2008.
- Interface Issues in Computer Graphics. in Graduate Computer Graphics. 2004.
- Prototyping. in Software Engineering I. 2003.
- Scripting Multimedia Interactions. Mechano-Informatics Laboratory. 2001.
- Intelligent Agent Technologies. Information Systems Engineering II. UT. 1999, 2000.
- Conversation Engineering. Men and Machines survey course. UT. 1997, 1998.
- Designing Usable Software. three sessions. Design Laboratory III. UT. 1995, 1996.
- Signal Processing for Speech. Signal and Image Processing Course. UT. 1995 – 1997, 1999.
- Connectionist Natural Language Processing, Hara Foundation Advanced Technology Lecture Series, Tokyo, February 1993.
- Connectionism. two lectures. Information Systems Engineering Course, UT. 1992.

<b>SERVICE</b>
----------------

## **SERVICE TO THE RESEARCH COMMUNITY**

### ORGANIZING COMMITTEE

- Interdisciplinary Workshop on Feedback Behaviors in Dialog, Stevenson, Washington, September 2012, lead organizer.
- Workshop on Predictive Models of Human Communication Dynamics, August 4-6, 2010, Los Angeles, co-organizer with Louis-Philippe Morency
- Workshop on Modeling Human Communication Dynamics, at the Conference on Neural Information Processing Systems (NIPS), 2010, co-organizer.
- Special Session on The Prosody of Turn-Taking and Dialog Acts at Interspeech 2006, lead organizer.

### EDITORIAL BOARD

- International Journal of Speech Technology, 2001–present

### GRANT REVIEWING

- National Science Foundation: Science and Technology Centers, panelist, 2011; Robust Intelligence, panelist 2009; Advanced Learning Technologies, panelist, 2005, 2006, 2007, 2008; Human Language and Communication, panelist, 2004; Science of Learning Centers, site visitor, 2004; Information Technology Research, panelist, 2000; Information, Robotics and Intelligent Systems, reviewer, 1993.
- Medical Infrastructure Program, US Army, tasked to the American Institute of Biological Sciences, reviewer, 2011
- Social Signal Processing Net (EU Project), workpackage reviewer, 2010
- Economic and Social Research Council (UK), reviewer, 2006

## CONFERENCE REVIEWING

CHI (ACM Computer Human Interaction) Conference, 2002 – 2012  
Interspeech (ICSLP, Eurospeech), 2005 – 2011 (Scientific Review Committee)  
IEEE Spoken Language Technology Workshop, 2010  
NAACL HLT (North American Chapter of the Association for Computational Linguistics — Human Language Technologies Conference) 2009, 2012  
Intelligent User Interfaces, 2009, 2010, 2011  
ACM Multimedia 2010 Workshop on Affective Interaction in Natural Environments  
EACL (European Chapter of the Association for Computational Linguistics), 2009.  
MobileHCI 2008  
Intelligent Virtual Agents, 2006, 2007  
International Congress of Phonetic Science, 2007, 2011  
Frontiers in Education, 2006 – 2010  
Association for Machine Translation in the Americas, 2006  
International Conference on Multimodal Interfaces, 2005  
International Joint Conference on Natural Language Processing, 2004  
Association for Computational Linguistics, 1997, 1998, 2000, 2003  
Coling 2002, 2010  
Cognitive Science Conference, 1994, 1998

## PROGRAM COMMITTEES

ACL SIGdial Workshop on Discourse and Dialogue, 2001, 2008, 2011, 2012  
Semdial 2011 (Workshop on the Semantics and Pragmatics of Dialogue)  
Speech Prosody 2004, 2006, 2008, 2010, 2012 (Scientific Committee)  
International Natural Language Generation Conference, 2002, 2004  
Computational Psycholinguistics Conference, 1997

## JOURNAL REVIEWING

*Speech Communication*, 2004, 2005, 2008, 2010, 2011  
*Computer Speech and Language*, 2011  
*ACM Transactions on Speech and Language Processing*, 2011  
*IEEE Transactions on Affective Computing*, 2011  
*Journal of Phonetics*, 2011  
*Journal of the Acoustic Society of America*, 2010  
*International Journal of Human-Computer Studies*, 2004, 2008

*Intercultural Pragmatics*, 2007

*Language and Speech*, 2003

*Journal of Experimental and Theoretical Artificial Intelligence*, 1992

*Computational Intelligence*, 1991

#### OTHER REVIEWING

various tenure and promotion cases

textbook proposals in HCI, Search Engines etc. for McGraw-Hill, Prentice-Hall, Pearson, and Wiley, 2003-2008

Persistent Conversation Track at HICSS 2003

Prosody and Speech Recognition Session at ICSLP 2002

Virtual Conversational Characters Workshop, at the Australasian User Interface Conference, 2003

International Workshop on Lifelike Animated Agents: Tools, Affective Functions and Applications, at PRICAI, 2002

AAAI-94 Workshop on Integration of Natural Language and Speech Processing, 1994

#### OTHER

Registration Chair, ACM Design- of Communication (SigDOC) Workshop, 2007

Discussant, Dialogue Systems Session at the SLATE Workshop on Speech and Language Technology in Education, 2007.

Member of the Discourse Labeling Scheme Advisory Committee for the Johns Hopkins 1997 Summer Speech Workshop.

Author, **Why not not evaluate AI?** Nigel Ward. *SIGART Bulletin*, 3(3), 1993.

#### ARTICLES ON ISSUES IN EDUCATION

**The (Un)Predictability of Computer Science Graduate School Admissions.** *Communications of the ACM*, 50 (3), pp 104-106, March 2007.

**Programming as a Discipline?** Nigel Ward. *Communications of the ACM*, 40 (12), pp 113-114, December 1997.

**The Nuts and Bolts of Engineering Education.** Nigel Ward. Henry Dyer Symposium Proceedings. University of Tokyo, School of Engineering, 1997.

**How to be a Terrible Thesis Advisor.** Nigel Ward. Net posting 1994, reprinted in *ACM Crossroads*, 1 (3), 1995.

**Japanese Engineering Education: Frustrations and Observations.** Nigel Ward. 71st Spring Annual Meeting, Japan Society of Mechanical Engineers, 1994.

#### DEPARTMENT AND UNIVERSITY SERVICE

Department Chair, 2011 –

CCS Building, Construction Liaison and Move Coordinator, 2011 – 2012

Faculty Senate Information Technology Committee, Chair 2008 – 2011

CS Facilities Committee, Chair 2004 – 2011

Department Webmaster 1997–2000, 2003 – 2011

CS Graduate Program Committee Member 2008 – 2011

University Information Technology Strategic Financial and Operational Planning Group Member, 2010 – 2011

College of Engineering, Faculty Council Constitution Task Force, 2007 – 2008

CS Graduate Program Chair / Graduate Advisor 2003–2005

Faculty Senator 2002 – 2003

<b>OTHER</b>
--------------

SOCIETY MEMBERSHIPS

ACM (Association for Computing Machinery)

and SigCHI (Computer-Human Interaction Special Interest Group)

ISCA (International Speech Communication Association)

and SProSig (Speech Prosody Special Interest Group)

and SigDial (Special Interest Group on Dialog and Discourse)

ACL (Association for Computational Linguistics)

IPSJ (Information Processing Society of Japan)

and SIG-SLP (Spoken Language Processing Special Interest Group)

JSAI (Japanese Society for Artificial Intelligence)

and SIG-SLUD (Spoken Language Understanding and Dialog Special Interest Group)

LANGUAGES

English (native), Japanese, some French

CITIZENSHIP

USA

January 7, 2012