

## RODNEY D. NIELSEN

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### EDUCATION

Dual Ph.D., Computer Science & Cognitive Science, University of Colorado, Boulder, Jan 2008  
M.S., Computer Science, University of Colorado at Boulder, 2005  
M.S. ABD, EEE, Computer Engineering, NDSU, 1988  
B.A., Mathematics, Minot State University, 1986  
B.S., Computer Science, Minot State University, 1986

### PROFESSIONAL EXPERIENCE

Associate Professor, Department of Computer Science & Engineering, UNT, 2012 – present  
Research Scientist, The Institute of Cognitive Science, CU Boulder, 2009 – 2012  
Assistant Professor Adjunct, Dept. of Computer Science, CU Boulder, 2009 – 2012  
Research Scientist, Boulder Language Technologies, Boulder, CO, 2008 – 2012  
Research Collaborator, Mayo Clinic Rochester, 2011 – 2012  
Research Assistant, Department of Computer Science, University of Colorado at Boulder, 2007  
Research Assistant, Institute of Cognitive Science, University of Colorado at Boulder, 2006  
Chief Technology Officer, Athena Systems, Broomfield, CO, 1995 – 2005  
Technology Research and Strategy, Jefferson, Golden, CO, 1997 – 2000  
Manager, Knowledge Technologies Group, Andersen Consulting, Chicago, IL, 1992 – 1995  
Senior Consultant, Artificial Intelligence, Andersen Consulting, Chicago, IL, 1990 – 1992  
Consultant, Artificial Intelligence Group, Andersen Consulting, Chicago, IL, 1988 – 1990

### RESEARCH INTERESTS

Natural Language Processing, Machine Learning, and Cognitive Science, with an emphasis on Educational Technology, Health & Clinical Informatics, and their confluence – Educational Health & Wellbeing Companion Robots

# PUBLICATIONS

## JOURNAL ARTICLES AND BOOK CHAPTERS

- Masoud Narouei, Hassan Takabi, and Rodney Nielsen. (Submitted). Automatic Extraction of Access Control Policies from Natural Language Documents. Submitted to *IEEE Transactions on Dependable and Secure Computing*.
- Myroslava O. Dzikovska, Rodney D. Nielsen, and Claudia Leacock. (2015). The joint student response analysis and recognizing textual entailment challenge: Making sense of student responses in educational applications. In *the Journal of Language Resources and Evaluation (JLRE)*, pp 67–93. Published by Springer, Netherlands. issn: 1574-020X, doi: 10.1007/s10579-015-9313-8 <http://dx.doi.org/10.1007/s10579-015-9313-8>
- John Wes Solomon and Rodney D. Nielsen. (2015). Predicting changes in systolic blood pressure using longitudinal patient records. In *Journal of Biomedical Informatics (JBI)*, 58, pp 197–202. 2015 Jul 22. <http://dx.doi.org/10.1016/j.jbi.2015.06.024>. (5-Year Impact Factor: 3.442)
- Rada F. Mihalcea and Rodney D. Nielsen. (2015). Natural language processing in learning environments. In J. Spector (Ed.), *The SAGE Encyclopedia of Educational Technology*. (pp. 534-536). SAGE Publications, Inc., Thousand Oaks, CA. doi: <http://dx.doi.org/10.4135/9781483346397.n221>
- Heather D. Anderson, Wilson D. Pace, Elias Brandt, Rodney D. Nielsen, Richard R. Allen, Anne M. Libby, David R. West, Robert J. Valuck. (2015). Monitoring suicidal patients in primary care using electronic health records. *The Journal of the American Board of Family Medicine (JABFM)*, 28(1), pp 65-71. Published by the American Board of Family Medicine, United States. (Impact factor for 2014: 1.981)
- Abhiraj Tomar and Rodney D. Nielsen. (2013). Affective-behavioral-cognitive learner modeling. In Robert Sottolare, Arthur Graesser, Xiangen Hu and Heather Holden (Eds.): *Design Recommendations for Adaptive Intelligent Tutoring Systems Learner Modeling (Volume I)*, pp 75-86, July 2013. ISBN: 978-0-9893923-0-3.
- Daniel Albright, Arrick Lanfranchi, Anwen Fredriksen, William F Styler IV, Colin Warner, Jena D Hwang, Jinho D Choi, Dmitriy Dligach, Rodney D Nielsen, James Martin, Wayne Ward, Martha Palmer, Guergana K Savova. (2013). Towards comprehensive syntactic and semantic annotations of the clinical narrative. In *Journal of the American Medical Informatics Association (JAMIA)*, Volume 20, Issue 5, pp 922-930, January 25, 2013. BMJ. (5 year impact factor: 3.866)
- Rodney D. Nielsen, Wayne Ward and James H. Martin. (2009). Recognizing entailment in intelligent tutoring systems. In Ido Dagan, Bill Dolan, Bernardo Magnini and Dan Roth (Eds.): *The Journal of Natural Language Engineering, (JNLE)*, 15, pp 479-501. Cambridge University Press, Cambridge, United Kingdom.
- Rodney D. Nielsen, Kristy Boyer, Michael Heilman, Chin-Yew Lin, Juan Pino, and Amanda Stent. (2009). Evaluating question generation: Methodologies and performance metrics. In Vasile Rus and Art Graesser (Eds.) *The Question Generation Shared Task and Evaluation Challenge*, pp 24-36. ISBN: 978-0-615-27428-7.

Rodney D. Nielsen, Wayne Ward and James H. Martin. (2008). Soft computing in intelligent tutoring systems and educational assessment. In Bhanu Prasad (Ed.): *Soft Computing Applications in Business*, pp 201-230. Published by Springer-Verlag, Heidelberg, Germany.

## CONFERENCE AND WORKSHOP PROCEEDINGS

Natalie Parde and Rodney Nielsen. (2018). A Corpus of Metaphor Novelty Scores for Syntactically-Related Word Pairs. To appear in *the Proceedings of the Eleventh International Language Resources and Evaluation Conference, (LREC:18)*, 9 pages, Miyazaki, Japan, May 7-12, 2018. Published by the European Language Resources Association, (ELRA), Paris, France.

Florin Bulgarov and Rodney Nielsen. (2018). A Comprehensive Corpus for Enhancing Formative Feedback and Engagement in Educational Applications. To appear in *the Proceedings of the Eleventh International Language Resources and Evaluation Conference, (LREC:18)*, 9 pages, Miyazaki, Japan, May 7-12, 2018. Published by the European Language Resources Association, (ELRA), Paris, France.

Nishitha Guntakandla and Rodney Nielsen. (2018). Annotating Reflections for Therapeutic Emotive Companion Robots. To appear in *the Proceedings of the Eleventh International Language Resources and Evaluation Conference, (LREC:18)*, 9 pages, Miyazaki, Japan, May 7-12, 2018. Published by the European Language Resources Association, (ELRA), Paris, France.

Natalie Parde and Rodney Nielsen. (2018). Exploring the Terrain of Metaphor Novelty: A Regression-based Approach for Automatically Scoring Metaphors. In *the Proceedings of the Association for the Advancement of Artificial Intelligence (AAAI-18)*, 9 pages. New Orleans, Louisiana, USA, February 2-7, 2018. Published by the Association for the Advancement of Artificial Intelligence, (AAAI Press), Menlo Park, California.

Florin Bulgarov and Rodney Nielsen. (2018). Proposition Entailment in Educational Applications using Deep Neural Networks. In *the Proceedings of the Association for the Advancement of Artificial Intelligence (AAAI-18)*, 9 pages. New Orleans, Louisiana, USA, February 2-7, 2018. Published by the Association for the Advancement of Artificial Intelligence, (AAAI Press), Menlo Park, California.

Yassir Hashem, Hassan Takabi, Ram Dantu, and Rodney Nielsen. (2017). A Multi-Modal Neuro-Physiological Study of Malicious Insider Threats. In *the Proceedings of the 9th ACM Conference on Computer and Communications Security (CCS) International Workshop on Managing Insider Security Threats*, 16 pages. Dallas, Texas, USA, October 30-November 3, 2017.

Natalie Parde and Rodney Nielsen. (2017). Finding Patterns in Noisy Crowds: Regression-based Annotation Aggregation for Crowdsourced Data. In *the Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP 2017)*, pp 1908–1913. Copenhagen, Denmark, September 7-11, 2017.

- Kaushik Madala, Danielle Gaither, Rodney Nielsen and Hyunsook Do. (2017). Automated Identification of Component State Transition Model Elements from Requirements. In *Proceedings of the IEEE International Requirements Engineering Conference 4th International Workshop on Artificial Intelligence for Requirements (AIRE)*, pp. 386–392. Lisbon, Portugal, September 4-8, 2017.
- Florin Bulgarov and Rodney Nielsen. (2017). Minimal Meaningful Propositions Alignment in Student Response Comparisons. In *the Proceedings of the Eighteenth International Conference on Artificial Intelligence in Education (AIED 2017)*, pp 472–475. Wuhan, China, June 28-July 2, 2017.
- Nabila Salma, Bin Mai, Kamesh Namuduri, Rasel Mamun, Yassir Hashem, Hassan Takabi, Natalie Parde, and Rodney Nielsen. (2017). Using EEG Signals to Analyze IS Decision Making Cognitive Processes. In *Proceedings of the Gmunden Retreat on NeuroIS 2017*, pp 195–202, Gmunden, Austria, June 12-14, 2017.  
**Winner of the Dr. Hermann Zemlicka Award for the most visionary paper.**
- Masoud Narouei, Hamed Khanpour, Hassan Takabi, Natalie Parde and Rodney Nielsen. (2017). Towards a Top-down Policy Engineering Framework for Attribute-based Access Control. In *the Proceedings of the 22nd ACM Symposium on Access Control Models and Technologies*, pp 103–114. Indianapolis, Indiana, June 21-23, 2017.
- Natalie Parde and Rodney D. Nielsen. (2017). #SarcasmDetection is soooo general! Towards a Domain-Independent Approach for Detecting Sarcasm. In *the Proceedings of the Thirtieth International Artificial Intelligence Researchers Society Conference (FLAIRS-17)*, pp 276–281. Marco Island, Florida, May 22-24, 2017.
- Andreea Godea, Florin Bulgarov, and Rodney D. Nielsen. (2016). Automatic Generation and Classification of Minimal Meaningful Propositions in Educational Systems. In *Proceedings of the 26th International Conference on Computational Linguistics (CoLING 2016)*, pp 3226–3236. Osaka, Japan, December 11-16, 2016.
- Hamed KhanPour, Nishitha Guntakandla, and Rodney D. Nielsen. (2016). Dialogue Act Classification in Domain Independent Conversations Using a Deep Recurrent Neural Network. In *Proceedings of the 26th International Conference on Computational Linguistics (CoLING 2016)*, pp 2012–2021. Osaka, Japan, December 11-16, 2016.
- Natalie Parde, Adam Hair, Michalis Papakostas, Konstantinos Tsiakas, Maria Dagioglou, Vangelis Karkaletsis, and Rodney D. Nielsen. (2015). Grounding the meaning of words through vision and interactive gameplay. In *Proceedings of the Twenty Fourth International Joint Conference on Artificial Intelligence (IJCAI 2015)*, pp 1895-1901. Buenos Aires, Argentina, July 25-31, 2015.
- Karen Mazidi and Rodney D. Nielsen. (2015). Leveraging multiple views of text for automatic question generation. In *Proceedings of the Seventeenth International Conference on Artificial Intelligence in Education (AIED 2015)*, pp 257-266. Madrid, Spain, June 22–26, 2015.
- Amir H. Kargar B., Mohammad Mahoor, Benjamin Miller, and Rodney D. Nielsen. (Submitted). A social robot exercise motivator: Implication for intervention with elderly with depression. Submitted to *2015 IEEE International Conference on Robotics and Automation (ICRA 2015)*. Seattle, Washington, USA, May 26-30, 2015.

- Nishitha Guntakandla and Rodney D. Nielsen. (2015). Modeling Turn-Taking in Human Conversations. In *Proceedings of the Association for the Advancement of Artificial Intelligence Spring Symposium Series on Turn Taking, (AAAI SSS-15)*, pp 17-22. Stanford University, Palo Alto, California, USA, March 23-25, 2015. Published by the Association for the Advancement of Artificial Intelligence, (AAAI Press), Menlo Park, California, USA.
- Natalie Parde, Michalis Papakostas, Konstantinos Tsiakas, Maria Dagioglou, Vangelis Karkaletsis and Rodney D. Nielsen. (2015). I Spy: An interactive game-based approach to multimodal robot learning. In *Proceedings of the Association for the Advancement of Artificial Intelligence (AAAI-15) Conference Workshop on Knowledge, Skill, and Behavior Transfer in Autonomous Robots*, pp 35-41. Austin, Texas, USA, January 25-29, 2015. Published by the Association for the Advancement of Artificial Intelligence, (AAAI Press), Menlo Park, California.
- John Wes Solomon and Rodney D. Nielsen. (2014). Predicting changes in systolic blood pressure in longitudinal patient records. In *AMIA 2014 Informatics for Integrating Biology and the Bedside (i2b2) workshop on Challenges in Natural Language Processing for Clinical Data*, pp 1-6. Washington, D.C., USA, November 14, 2014.
- Amir H. Kargar B., Ali Mollahosseini, Taylor Struempf, Wilson Pace, Rodney D. Nielsen and Mohammad H. Mahoor. (2014). Automatic measurement of physical mobility in get-up-and-go test using Kinect sensor. In the *Proceedings of the 36<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'14)*, pp 3492-3495. Chicago, Illinois, USA, August 26–30, 2014.
- Xiao Zhang, Ali Mollahosseini, Amir H. Kargar B., Evan Boucher, Richard M. Voyles, Rodney D. Nielsen and Mohammad H. Mahoor. (2014). eBear: An Emotive Bear-Like Robot. In the *Proceedings of the 23<sup>rd</sup> IEEE International Symposium on Robot and Human Interactive Communication (IEEE RO-MAN 2014)*, pp 969-974. Edinburgh, Scotland, United Kingdom, August 25–29, 2014.
- Karen Mazidi and Rodney D. Nielsen. (2014). Linguistic Considerations in Automatic Question Generation. In the *Proceedings of the 52nd Annual Meeting of the Association for Computational Linguistics (ACL 2014)*, pp 321-326. Baltimore, Maryland, USA, June 23-27, 2014. Published by the Association for Computational Linguistics, (ACL), Stroudsburg, Pennsylvania.
- Ruth Wylie, Michelene T.H. Chi, Robert Talbot, Erik Dutilly, Susan Tricket, Brandon Holding, and Rodney D. Nielsen. (2014). Comprehension SEEDING: Providing Real-Time Formative Assessment to Enhance Classroom Discussion. In *Proceedings of the 11<sup>th</sup> International Conference of the Learning Sciences (ICLS 2014)*, pp 1527-1528. Boulder, Colorado, USA, June 23–27, 2014.
- Bandita Sarma, Amitava Das, and Rodney D. Nielsen. (2014). A Framework for Health Behavior Change Using Companionable Robots. In *Proceedings of the 8th International Natural Language Generation Conference (INLG2014)*, pp 103-108. Philadelphia, Pennsylvania, USA, June 19–21, 2014.

- Natalie Parde and Rodney D. Nielsen. (2014). Design Challenges and Recommendations for Multi-Agent Learning Systems Featuring Teachable Agents. In the *Proceedings of the 2nd Annual GIFT Users Symposium (GIFTSym2)*, pp 147-160. Pittsburgh, Pennsylvania, USA, June 12–13, 2014.
- Frank Paiva, James Glenn, Karen Mazidi, Robert Talbot, Ruth Wylie, Michelene Chi, Erik Dutilly, Brandon Holding, MingYu Lin, Susan Trickett and Rodney D. Nielsen. (2014). Comprehension SEEDING: Comprehension through Self Explanation, Enhanced Discussion, and INquiry Generation. In *Proceedings of the 12<sup>th</sup> International Conference on Intelligent Tutoring Systems (ITS 2014)*, pp 283-293. Manoa, Hawaii, USA, June 5–9, 2014.
- Karen Mazidi and Rodney D. Nielsen. (2014). Pedagogical Evaluation of Automatically Generated Questions. In *Proceedings of the 12<sup>th</sup> International Conference on Intelligent Tutoring Systems (ITS 2014)*, pp 294-299. Manoa, Hawaii, USA, June 5–9, 2014.
- Ruth Wylie, Brandon Holding, Robert Talbot, Michelene T.H. Chi, Susan Trickett and Rodney D. Nielsen. (2014). Using Log Data to Predict Response Behaviors in Classroom Discussions. In *Proceedings of the 12<sup>th</sup> International Conference on Intelligent Tutoring Systems (ITS 2014)*, pp 670-671. Manoa, Hawaii, USA, June 5–9, 2014.
- Frank Paiva and Rodney D. Nielsen. (2014). Clustering Constructed Responses for Formative Assessment in Comprehension SEEDING. In *Proceedings of the 12<sup>th</sup> International Conference on Intelligent Tutoring Systems, Young Researchers Track, (ITS 2014)*, pp 686-688. Manoa, Hawaii, USA, June 5–9, 2014.
- Xiao Zhang, Mohammad H. Mahoor and Rodney D. Nielsen. (2013). On multi-task learning for facial action unit detection. In the *Proceedings of 28th International Conference on Image and Vision Computing New Zealand (IVCNZ 2013)*, pp 202-207. Wellington, New Zealand, November 27–29, 2013.
- Talbot, R.M., Wylie, R., Barnett, S., Nielsen, R., & Chi, M.T.H (2013). Deploying tablets in middle schools for research and development: Struggles and successes. At the *112<sup>th</sup> Annual Convention of the School Science and Mathematics Association (SSMA 2013)*. San Antonio, Texas, November 14-16, 2013.
- Myroslava O. Dzikovska, Rodney D. Nielsen, Chris Brew, Claudia Leacock, Danilo Giampiccolo, Luisa Bentivogli, Peter Clark, Ido Dagan and Hoa Trang Dang. (2013). SemEval-2013 Task 7: The Joint Student Response Analysis and 8th Recognizing Textual Entailment Challenge. In *Proceedings of the Second Joint Conference on Lexical and Computational Semantics (\*SEM 2013), 7th International Workshop on Semantic Evaluation (SemEval 2013)*, pp 263-274. Published by the Association for Computational Linguistics. Atlanta, Georgia, USA. June 13-14, 2013.
- Ruth Wylie, Michelene Chi, Robert Talbot and Rodney D. Nielsen. (2013). Comprehension SEEDING: Using technology to enhance self-explanation, classroom discussion, and question generation. At the annual meeting of the *American Educational Research Association (AERA)*. San Francisco, California, USA. April 27–May 1, 2013.
- Xiao Zhang, Mohammad Mahoor, Daniel Messinger, Richard Voyles and Rodney Nielsen (2013). Modeling the Dynamics of Spontaneous Facial Action Units. In the *Proceedings of IEEE International Conference on Automatic Face and Gesture Recognition (FG 2013)*. Shanghai, China. April 22-26, 2013.

- Talbot, R.M., Holding, B., Chi, M.T.H., Nielsen, R., Wylie, R. (2012). Defining a construct for assessing deep learning in middle school physical science. At *the 4<sup>th</sup> Annual iSTEM Symposium on STEM Education*. Boulder, Colorado, October 1, 2012.
- Myroslava Dzikovska, Rodney D. Nielsen, and Chris Brew. (2012). Towards effective tutorial feedback for explanation questions: A dataset and baselines. In *Proceedings of the 2012 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, (NAACL HLT 2012)*, pp 200-210. Montreal, Québec, Canada, June 3-8, 2012. Published by the Association for Computational Linguistics, (ACL), Stroudsburg, Pennsylvania.
- Brian L. Cairns, Rodney D. Nielsen, James J. Masanz, James H. Martin, Martha S. Palmer, Wayne H. Ward, and Guergana K. Savova. (2011). The MiPACQ clinical question answering system. *American Medical Informatics Association Annual Symposium (AMIA 2011)*, pp 171-180, Washington, D.C., October 22-26, 2011.
- Rodney D. Nielsen, James J. Masanz, James H. Martin, Martha S. Palmer, Wayne H. Ward, and Guergana K. Savova. (Submitted). Beyond QA: collaborative dialogue for clinical research discovery. *American Medical Informatics Association Annual Symposium (AMIA 2011)*. October 22-26, 2011. Washington D.C.
- Heather D. Anderson, Wilson D. Pace, Elias Brandt, Rodney D. Nielsen, David R. West, Richard R. Allen, Anne M. Libby, and Robert J. Valuck. (2011). Methods for enhanced identification and detection of suicidality outcomes in observational comparative effectiveness and safety research. In the *Third Symposium on Comparative Effectiveness Research Methods (Methods for Developing and Analyzing Clinically Rich Data for Patient-Centered Outcomes Research)*. Rockville, Maryland, June 6-7, 2011.
- Heather Anderson, Wilson D. Pace, Elias Brandt, Rodney D. Nielsen, David R. West, and Robert J. Valuck. (2011). Methods for detecting suicidality outcomes in observational comparative effectiveness and safety studies. At the *annual meeting of the New Clinical Drug Evaluation Unit (NCDEU)*, (*National Institute of Mental Health*), pp 65-71, Boca Raton, Florida, June 13-16, 2011. American Society of Clinical Psychopharmacology.
- Rodney D. Nielsen, Richard Voyles, Daniel Bolanos, Mohammad Mahoor, Wilson Pace, Katie Siek, and Wayne Ward. (2010). A Platform for Human-Robot Dialog Systems Research. In *Proceedings of AAAI Fall Symposium, Dialog with Robots*, pp 161-162, Arlington, Virginia, November 11-13, 2010. AAAI Press.
- Rodney D. Nielsen, James Masanz, Philip V. Ogren, Wayne Ward, James Martin, and Guergana K. Savova. (2010). An architecture for complex clinical question answering. In *Proceedings of the First Annual ACM International Health Informatics Conference (IHI 2010)*, pp 395-399, Arlington, VA, November 11-12, 2010. ACM, New York, NY.
- Rodney D. Nielsen, James H. Martin, James Masanz, Wayne Ward, and Guergana Savova. (Submitted). Characterizing Clinical Questions and Question Answering Systems. *American Medical Informatics Association Annual Symposium (AMIA 2010)*. November 13-17, 2010. Washington D.C.

- Lee Becker, Rodney D. Nielsen, Ifeyinwa Okoye, Tamara Sumner, Wayne H. Ward. (2010). What's next? Target Concept Identification and Sequencing. In *Proceedings of the Third Workshop on Question Generation, at the Tenth International Conference on Intelligent Tutoring Systems, (ITS 2010)*, pp 35-44, Pittsburgh, Pennsylvania, June 14-18, 2010.
- Dmitriy Dligach, Rodney Nielsen, Martha Palmer. (2010). To Annotate More Accurately or to Annotate More. In *Proceedings of the Fourth Linguistics Annotation Workshop, at the Forty-Eighth annual meeting of the Association for Computational Linguistics, (ACL-10)*, pp 64-72, Uppsala, Sweden, July 11-16, 2010. Published by the Association for Computational Linguistics, (ACL), Stroudsburg, Pennsylvania.
- Jena D. Hwang, Rodney D. Nielsen, and Martha Palmer. (2010). Towards a Domain Independent Semantics: Enhancing Semantic Representation with Construction Grammar. In *Proceedings of the North American Association for Computational Linguistics – Human Language Technologies, Workshop on Extracting and Using Constructions in Computational Linguistics, (NAACL HLT 2010)*, pp 1-8, Los Angeles, California, June 1-6, 2010. Published by the Association for Computational Linguistics, (ACL), Stroudsburg, Pennsylvania.
- Lee Becker, Rodney D. Nielsen, and Wayne Ward. (2009). What a pilot study says about running a question generation challenge. In *Proceedings of the Second Workshop on Question Generation, at the 14th International Conference on Artificial Intelligence in Education*, 8 pages, Brighton, United Kingdom, July 6-10, 2009. IOS Press.
- Les Sikos, Rodney D. Nielsen, Travis Rood, Laura A. Michaelis, Martha Palmer and Albert D. Kim. (2009). On the Road to Conventionalization: Analyses of Nominal Coercion. At the *Twenty-Second Annual Meeting of the CUNY Conference on Human Sentence Processing*. Davis, CA. March 2009.
- Rodney D. Nielsen, Lee Becker, and Wayne Ward. (2008). TAC 2008 CLEAR RTE system report: Facet-based entailment. In *Proceedings of the Text Analysis Conference (TAC2008)*, 8 pages, Gaithersburg, Maryland, November 17-19, 2008. National Institute of Standards and Technology.
- Rodney D. Nielsen. (2008). Question generation: Proposed challenge tasks and their evaluation. In Vasile Rus and Art Graesser (Eds.): *Proceedings of the Workshop on the Question Generation Shared Task and Evaluation Challenge*, Arlington, Virginia, September 25-26, 2008.
- Rodney D. Nielsen, Jason Buckingham, Gary Knoll, Ben Marsh and Leysia Palen. (2008). A Taxonomy of questions for question generation. In Vasile Rus and Art Graesser (Eds.): *Proceedings of the Workshop on the Question Generation Shared Task and Evaluation Challenge*, Arlington, Virginia, September 25-26, 2008.
- Rodney D. Nielsen, Wayne Ward and James H. Martin. (2008). Automatic generation of fine-grained representations of learner response semantics. In Beverly Park Woolf, Esma Aimeur, Roger Nkambou and Susanne P. Lajoie (Eds.): *Proceedings of the Ninth International Conference on Intelligent Tutoring Systems, (ITS 2008)*, pp 173-183, Montreal, Canada, June 23-27, 2008. Published by Springer, Heidelberg, Germany.



- Rodney D. Nielsen, Wayne Ward, James H. Martin and Martha Palmer. (2008). Extracting a representation from text for semantic analysis. In *Proceedings of the Forty-Sixth annual meeting of the Association for Computational Linguistics and the Human Language Technologies Conference, (ACL-08:HLT)*, pp 241-244, Columbus, Ohio, June 15-20, 2008. Published by the Association for Computational Linguistics, (ACL), Stroudsburg, Pennsylvania.
- Rodney D. Nielsen, Wayne Ward and James H. Martin. (2008). Classification errors in a domain-independent assessment system. In *Proceedings of the Third Workshop on Innovative Use of Natural Language Processing for Building Educational Applications, at the Forty-Sixth annual meeting of the Association for Computational Linguistics, (ACL-08:HLT)*, pp 10-18, Columbus, Ohio, June 15-20, 2008. Published by the Association for Computational Linguistics, (ACL), Stroudsburg, Pennsylvania.
- Rodney D. Nielsen, Wayne Ward, James H. Martin and Martha Palmer. (2008). Annotating students' understanding of science concepts. In *Proceedings of the Sixth International Language Resources and Evaluation Conference, (LREC:08)*, pp 3441-3448, Marrakech, Morocco, May 28-30, 2008. Published by the European Language Resources Association, (ELRA), Paris, France.
- Rodney D. Nielsen, Wayne Ward and James H. Martin. (2008). Learning to assess low-level conceptual understanding. In David Wilson and H. Chad Lane (Eds.): *Proceedings of the Twenty-First International Artificial Intelligence Researchers Society Conference, (FLAIRS-08)*, pp 427-432, Coconut Grove, Florida, May 15-17, 2008. Published by the Association for the Advancement of Artificial Intelligence, (AAAI Press), Menlo Park, California.
- Rodney D. Nielsen and Wayne Ward. (2007). A corpus of fine-grained entailment relations. In *Proceedings of the Pattern Analysis, Statistical Modelling and Computational Learning Workshop on Textual Entailment and Paraphrasing, at the Forty-Fifth annual meeting of the Association for Computational Linguistics, (ACL-PASCAL-07)*, pp 28-35, Prague, Czech Republic, June 23-30, 2007. Published by the Association for Computational Linguistics, (ACL), Stroudsburg, Pennsylvania.
- Steven Bethard, Rodney D. Nielsen, James H. Martin, Wayne Ward, and Martha Palmer. (2007). Semantic integration in learning from text. In *Proceedings of the Association for the Advancement of Artificial Intelligence Spring Symposium Series on Machine Reading, (AAAI SSS-07)*, pp 17-22, Stanford University, Palo Alto, California, March 26-28, 2007. Published by the Association for the Advancement of Artificial Intelligence, (AAAI Press), Menlo Park, California.
- Rodney D. Nielsen, Wayne Ward and James H. Martin. (2006). Toward dependency path based entailment. In Bernardo Magnini and Ido Dagan (Eds.): *Proceedings of the Second PASCAL Recognising Textual Entailment Challenge Workshop, (PASCAL RTE 2006)*, pp 44-49, Venice, Italy, April 10, 2006. Published by the Pattern Analysis, Statistical Modelling and Computational Learning Network of Excellence, (PASCAL).

Rodney D. Nielsen and Sameer Pradhan. (2004). Mixing weak learners in semantic parsing. In Dekang Lin and Dekai Wu (Eds.): *Proceedings of the Conference on Empirical Methods in Natural Language Processing, (EMNLP 2004)*, pp 80-87, Barcelona, Spain, July 25-26, 2004. Published by the Association for Computational Linguistics, (ACL), Stroudsburg, Pennsylvania.

Rodney D. Nielsen. (2004). MOB-ESP and other improvements in probability estimation. In Max Chickering and Joseph Halpern (Eds.): *Proceedings of the Twentieth Conference on Uncertainty in Artificial Intelligence, (UAI-2004)*, pp 418-425, Banff, Canada, July 7-11, 2004. Published by the Association for Computing Machinery, (ACM), New York, New York.

## PH.D. THESIS

Rodney D. Nielsen. (2008). *Learner answer assessment in intelligent tutoring systems*. Ph.D. thesis, Wayne Ward and James H. Martin, Co-Advisors, the University of Colorado at Boulder, January 4, 2008.

## POSTERS AND TECHNICAL REPORTS

Natalie Parde and Rodney D. Nielsen. Reading with Robots: Towards an Intelligent Reading Companion that Promotes Cognitive Exercise in Older Adults. Peer Reviewed Poster at *the 2017 Dallas Aging and Cognition Conference*. Dallas, Texas, January 29-30, 2017.

Natalie Parde and Rodney D. Nielsen. (2016). Getting to the heart of metaphors: Dependency-based detection of metaphoric juxtapositions. Poster at *the 2016 CRA Women Graduate Cohort Workshop*. San Diego, California, USA, April 15-16, 2016.

Natalie Parde, Michalis Papakostas, Konstantinos Tsiakas and Rodney D. Nielsen. (2015). "Is it rectangular?" Using I Spy as an interactive, game-based approach to multimodal robot learning. In *the Student Abstract and Poster Program of the Twenty Ninth Association for the Advancement of Artificial Intelligence Conference (AAAI-15)*. Austin, Texas, USA, January 25-29, 2015.

John Wes Solomon and Rodney D. Nielsen. (2014). Predicting changes in systolic blood pressure in longitudinal patient records. At *the AMIA 2014 Informatics for Integrating Biology and the Bedside (i2b2) workshop on Challenges in Natural Language Processing for Clinical Data*. Washington, D.C., USA, November 14, 2014.

Rodney D. Nielsen, Mohammad Mahoor, Wilson Pace, Benjamin Miller, Wayne Ward, et al. (2014). Companionbots for Health Behavior Change Dialogue. Poster at the *Annual NSF Smart and Connected Health Principal Investigators' Meeting*. Arlington, Virginia, USA, August 6-7, 2014.

Natalie Parde, Michalis Papakostas, Konstantinos Tsiakas, Maria Dagioglou, Vangelis Karkaletsis, and Rodney D. Nielsen. (2014) I Spy: An interactive game-based approach to multimodal robot learning. At *the 2014 International Research-Centered Summer School in Cognitive Systems and Interactive Robotics, Data and Content Analysis (IRSS14)*. NCRS Demokritos, Athens, Greece, July 3-30, 2014.

**First place** (out of 13 international teams), and  
**People's choice award**

- Karen Mazidi and Rodney D. Nielsen. (2014). Automatically Generating Questions from Text. Poster at *the 2014 CRA-W Graduate Cohort Workshop*. Santa Clara, California, April 11-12, 2014.
- Natalie Parde and Rodney D. Nielsen. (2014). Improving Cognition in the Elderly via Dialogue-Based Games with Teachable Robot Agents. Poster at the *2014 CRA-W Graduate Cohort Workshop*. Santa Clara, California, USA, April 11-12, 2014.
- Karen Mazidi and Rodney D. Nielsen. (2014). Automatically generating questions from text. At *UNT Toulouse Graduate School Graduate Exhibition*. March 1, 2014.  
***First place Computer Science and Information Technology***
- MingYu Lin, James Glenn, Frank Paiva and Rodney D. Nielsen. (2013). Comprehension SEEDING project: Comprehension through Self Explanation, Enhanced Discussion and Inquiry Generation. At *CENG Showcase of Undergraduate Research in Engineering 2013*. September 20, 2013.  
***First place Computer Science***
- Wilson Pace, Rodney D. Nielsen, Heather Anderson, Robert Valuck, Elias Brandt, and David R. West. (2010). Data additions related to depression care through natural language processing. A report to *Agency for Healthcare Research and Quality: Developing Evidence to Inform Decisions about Effectiveness (DEcIDE) Program*. November, 2010.
- Markus Breitenbach, Rodney Nielsen and Gregory Grudic. (2003). Probabilistic random forests: Predicting data point specific misclassification probabilities. Technical Report CU-CS-954-03, the University of Colorado at Boulder.
- Rodney D. Nielsen. (1995). Automated unit test generation in expert systems. Andersen Consulting Technical Report, Chicago, Illinois.
- Rodney D. Nielsen. (1995). End-user code generation in expert systems. Andersen Consulting Technical Report, Chicago, Illinois.

## SIGNIFICANT CONTRIBUTIONS

- Heather Orton Anderson, Anne Libby, and Robert Valuck. (2010). Methods for detecting suicidality outcomes in observational comparative effectiveness research. Presented at *the American Public Health Association's 138<sup>th</sup> Annual Meeting and Expo*, Denver, Colorado, November 6-10, 2010.
- Dmitriy Dligach and Martha Palmer. (2008). Novel Semantic Features for Verb Sense Disambiguation. In *Proceedings of ACL-08: HLT*, pp 29–32, Columbus, Ohio, USA, June 2008. Association for Computational Linguistics, (ACL), Stroudsburg, Pennsylvania.
- David Reynolds and Tim Beck. (1993). Tennessee offender management information system. In *Proceedings of the Fifth Conference on Innovative Applications of Artificial Intelligence, (IAAI-93)*, Washington, DC, July 11-15, 1993. Published by the Association for the Advancement of Artificial Intelligence, (AAAI Press), Menlo Park, California.  
(Designed the knowledge-based system and implemented its architectural code.)

## OTHER INVITED TALKS

- Rodney D. Nielsen and Natalie Parde. (2016). Perceptive Emotive Spoken-Dialogue Companion Robots. Invited Talk at the 2016 IEEE MetroCon Conference. Arlington, Texas, USA, October 26, 2016.
- Rodney D. Nielsen. (2016). Transdisciplinary Human Language Technology-Enabled Research: Advancing NLP in collaborative research on learning technologies, health informatics, clinical psychology and data science. Keynote at the COI 2016 Multi-Disciplinary Research Exchange conference (MDREC). Denton, Texas, USA, January 30, 2016.
- Rodney D. Nielsen. (2014). Spoken-Dialog Healthcare Companionbots for Elders. *At the 2014 International Research-Centered Summer School in Cognitive Systems and Interactive Robotics, Data and Content Analysis (IRSSI4)*. NCRS Demokritos, Athens, Greece, July 9, 2014.
- Rodney D. Nielsen. (2012). Companionbots: Perceptive, emotive, spoken-dialogue companion robots for health and wellbeing in the elderly. At University of Wisconsin – Milwaukee, Milwaukee, Wisconsin, October 17, 2012.
- Rodney D. Nielsen. (2012). Fine-Grained Learner Modeling. *At the ARL-IIS Learner Modeling Techniques Advisory Board Meeting*. Memphis, Tennessee, September 9-12, 2012.
- Rodney D. Nielsen. (2011) The Multi-source Integrated Platform for Answering Clinical Questions (MiPACQ). *At Advances in Clinical Question Answering: Watson meets Healthcare, John Hurdle and Guergana Savova moderators, at American Medical Informatics Association Annual Symposium (AMIA 2011)*. October 22-26, 2011. Washington D.C.
- Rodney D. Nielsen. (2009). Combining statistical and knowledge-based approaches to improve information extraction. At Computational Bioscience Program, Denver Health Sciences Center / Anschutz Medical Campus, Denver, Colorado, April 27, 2009.
- Rodney D. Nielsen. (2006). Learner answer assessment in intelligent tutoring systems. At The Institute of Cognitive Science, University of Colorado at Boulder, 2006.
- Rodney D. Nielsen. (1991-1994). *Gave invited talks to clients of Accenture / Andersen Consulting (e.g., AT&T Credit Card Services, Disney, etc.) describing methods in Machine Learning and Artificial Intelligence and how they could be applied to improve the client's processes.*

## GRANTS AND CONTRACTS

- National Science Foundation IIS-1262860 (transferred to UNT from IIS-1111953 below), “Collaborative Research: Companionbots for Proactive Therapeutic Dialog on Depression”, \$1,118,752 to UNT (lead institution), 2012-2016, Rodney D. Nielsen (PI); with Co-PIs under other awards: NSF IIS-1111544 Daniel Bolanos and Wayne Ward, Boulder Language Technologies; NSF IIS-1111568 Mohammad Mahoor, DU; and Wilson Pace M.D., CU Anschutz Medical Campus.
- Institute of Education Sciences, Department of Education, R305A120808 (transferred to UNT from R305A110811 below), “Comprehension SEEDING: Comprehension through Self-

- Explanation, Enriched Discussion, and INquiry Generation”, \$1,459,275, 2012-2016, Rodney D. Nielsen (PI) with Co-PIs Michelene Chi, Arizona State University, and Robert Talbot, CU-Denver.
- National Science Foundation IIS-1111953, “Collaborative Research: Companionbots for Proactive Therapeutic Dialog on Depression”, nearly \$2M total collaborative effort 2011-2015, \$1,245,407 to CU-Boulder (lead), Rodney D. Nielsen (PI); with Co-PIs under other awards: NSF IIS-1111544 Daniel Bolanos and Wayne Ward, Boulder Language Technologies; NSF IIS-1111568 Mohammad Mahoor, DU; and Wilson Pace M.D., CU Anschutz Medical Campus.
- Institute of Education Sciences, Department of Education, R305A110811 “Comprehension SEEDING: Comprehension through Self-Explanation, Enriched Discussion, and INquiry Generation”, \$1,816,191, 2011-2014, Rodney D. Nielsen (PI) with Co-PIs Michelene Chi, Arizona State University, and Robert Talbot, CU-Denver.
- National Science Foundation, Graduate Research Fellowship Program “Building a better agent: The next generation of teachable-agent technology”, \$132,000, 2014-2019, Natalie Parde recipient.
- National Institutes of Health, American Recovery and Reinvestment Act grant NLM RC1LM010608, “MiPACQ: Multi-source Integrated Platform for Answering Clinical Questions”, \$1M, 2009-2011, Co-Investigator with: Guergana Savova (lead PI, Harvard Medical School), Christopher Chute (PI, Mayo Clinic Rochester), James Martin (PI, CU-Boulder), M. Palmer and W. Ward (Co-PIs).
- Agency for Healthcare Research and Quality, “Expanding DARTNet to Conduct a Comparative Effectiveness Study on Major Depression”, \$45,142 subcontract to CU-Boulder for computational semantics to detect mentions and severity of depression and suicide, Rodney D. Nielsen (PI), 2010-2011.
- Institute of Education Sciences, Department of Education, “Improving Science Learning Through Tutorial Dialogs”, \$3,130,043, Co-Investigator with Wayne Ward (PI), 2007–2011, (Conceived & wrote the experimental design.)
- National Science Foundation, Science of Learning Center, Competitive Summer Research sub-Award from the Institute of Cognitive Science, \$3,000, 2007, (Wrote parts of the proposal and supervised the undergraduate student that received the award.)
- National Science Foundation, Science of Learning Center, Competitive Summer Research sub-Award from the Institute of Cognitive Science, \$4,500, 2006.
- CU Boulder Department of Computer Science, Institute of Cognitive Science, and the Graduate School, four travel grants. Around \$1,500. 2004.
- Dade County, Florida, *Judicial Case Scheduling AI*, ~\$2.5M. (Wrote the proposal’s AI R&D; did not participate in the implementation due to other commitments), 1993–1995.
- Newell Corp, *Custom Sales, Configuration, Shop-floor Scheduling, Routing & Packaging AI*. ~\$2M. (PD of AI R&D), 1992–1994.
- Illinois State Chamber of Commerce, *Workforce Matchmaking and Training Recommendation AI*, ~\$750K. (PD of AI R&D), 1992–1993.

Baltimore Gas & Electric, *Service Scheduling and Routing AI*, ~\$1M. (PD of AI R&D), 1991–1992.

Tennessee Department of Corrections, *Offender Sentencing AI*, ~\$1.5M. (PD of AI R&D; won AAAI Innovative Applications of AI award), 1991–1992.

## OTHER AWARDS AND RECOGNITION INCLUDING TO ADVISEES

Winner of the Competitive Funding Research and Creativity Award; “one of the Office of Research and Economic Development’s highest honors” – a UNT Faculty Research and Creativity Award. The Competitive Funding Award goes to the Principal Investigator who promoted the mission of the University of North Texas in being responsible for the highest total amount of research funding on their competitive extramural grants during the preceding fiscal year.

Winner of the Dr. Hermann Zemlicka Award for Most Visionary Paper. (2017). Nabila Salma, Bin Mai, Kamesh Namuduri, Rasel Mamun, Yassir Hashem, Hassan Takabi, Natalie Parde, and Rodney Nielsen. (2017). Using EEG Signals to Analyze IS Decision Making Cognitive Processes. In *Proceedings of the Gmunden Retreat on NeuroIS 2017*, pp 195–202, Gmunden, Austria, June 12-14, 2017.

Leanne Joseph. NCWIT Aspirations in Computing National Honorable Mention and DFW Metroplex Award Winner. February 2017.

Shelby Hobohm. NCWIT Aspirations in Computing DFW Metroplex Award Winner. January 2017.

Michelle Yakubek. NCWIT Aspirations in Computing DFW Metroplex Award Winner. January 2017.

Dralia Tulley-Patton. (2016-17). SWSIS Information Security Scholarship from ACSA, CRA-W and HPE, March 2016. Research topic: NLP algorithms to recognize the difference between typical language and that of an insider security threat.

Daniel Jarvis. Outstanding Undergraduate Student in Computer Science, 2015–2016.

Sara Adams. NCWIT Aspirations in Computing DFW Metroplex Award Winner. February 12, 2016.

Honors Day 2015-16 recognition: named a UNT faculty who has been a source of support and inspiration to an award recipient.

University of North Texas, Center for Learning Enhancement, Assessment, and Redesign, CLEAR Thank a Teacher recognition (2015).

Kevin James. Outstanding Undergraduate Student in Computer Engineering. 2014–2015.

Natalie Parde, Michalis Papakostas, Konstantinos Tsiakas, Maria Dagioglou, Vangelis Karkaletsis, and Rodney D. Nielsen. (2014) I Spy: An interactive game-based approach to multimodal robot learning. At the 2014 International Research-Centered Summer School in Cognitive Systems and Interactive Robotics, Data and Content Analysis (IRSSI4). NCRS Demokritos, Athens, Greece, July 3-30, 2014.

**First place** (out of 13 international teams), and  
**People's choice award**

Karen Mazidi and Rodney D. Nielsen. (2014). Automatically generating questions from text. At UNT Toulouse Graduate School Graduate Exhibition. March 1, 2014.

**First place Computer Science and Information Technology.**

Honors Day 2014-15 recognition: named a UNT faculty who has been a source of support and inspiration to an award recipient.

Keerat Baweja. NCWIT Aspirations in Computing DFW Metroplex Award Winner. 2015.

Tanner Van De Walle. An Outstanding Computer Science and Engineering award winner. 2014–2015.

MingYu Lin, James Glenn, Frank Paiva and Rodney D. Nielsen. (2013). Comprehension SEEDING project: Comprehension through Self Explanation, Enhanced Discussion and Inquiry Generation. At CENG Showcase of Undergraduate Research in Engineering 2013. September 20, 2013.

**First place Computer Science.**

University of North Texas, Center for Learning Enhancement, Assessment, and Redesign, CLEAR Thank a Teacher recognition (2013).

American Association of Artificial Intelligence – Innovative Application of Artificial Intelligence award (Lead AI systems designer)

United States Patent Number 5791652: (Mathematics educational game)

Graduated Magna cum Laude with B.S. in Computer Science and B.A. in Mathematics.

## STUDENTS ADVISED

### POSTDOCTORAL SCHOLAR ADVISING

Amitava Das. *Personality classification and humor generation*. Research Scientist, HiLT Lab, UNT. Aug. 2013 – Sept. 2014.

Antonio Roque. *Dialogue in a companionable robot*. Postdoc, Center for Language and Education Research (CLEAR), University of Colorado at Boulder. 2011 – 2012.

### PH.D. CHAIR

Namratha Urs. *Automatic recognition of pessimistic explanatory style in dialogue*. M.S. Computer Science and Engineering, UNT. Expected graduation Spring 2020.

George Mihaila. *Reinforcement learning in robot object manipulation*. Ph.D. Computer Science and Engineering, UNT, expected Fall 2019.

Florin Bulgarov. *Generating Fine-Grained, Structured and Meaningful Feedback in Educational Applications*. Ph.D. Computer Science and Engineering, UNT, expected Fall 2018.

Andreea Godea. *Deep Neural Networks for Classifying Educational Questions*. Ph.D. Computer Science and Engineering, UNT, expected Fall 2018.

Nishitha Guntakandla. *Complex reflection in open-domain human-robot dialogue*. Ph.D. Computer Science and Engineering, UNT, expected Fall 2018.

Natalie Parde. *Building a better agent: The next generation of teachable-agent technology*. Ph.D. Computer Science and Engineering, UNT, expected Summer 2018.

Winner: National Science Foundation, Graduate Research Fellowship Program award, \$132,000, 2013-2018.

#### M.S. CHAIR / ADVISOR

Aniket Sakinala. *Multimodal emotion classification*. M.S. Computer Science and Engineering, UNT. Expected graduation: Spring 2018.

Florin Bulgarov. *Automatic extraction of key concepts from student and reference answers*. M.S. Computer Science and Engineering, UNT, Spring 2016.

Andreea Godea. *Classification of the importance of a question's reference answer concepts*. M.S. Computer Science and Engineering, UNT, Spring 2016.

Bandita Sarma. Thesis: *Patient resistance detection in health behavior change therapeutic dialogue systems*. Computer Science and Engineering, UNT, Spring 2015. Now at American Express.

Frank Paiva. *Clustering student responses to short-answer questions*. M.S. Computer Science and Engineering, UNT, Spring 2015. Now at Amazon.

Chengyuan Zhang. *Automatic pattern extraction from clinical text*. M.S. Computer Science and Engineering, UNT, Fall 2014.

Nishitha Guntakandla. *Using discourse cues in question generation*. M.S. Computer Science and Engineering, UNT, Spring 2014. Now in UNT Ph.D. program.

Anil Veerepally. *Recognizing attributes of pessimistic explanatory style in dialogue*. M.S. Computer Science and Engineering, UNT, Spring 2014.

Matt Pico. *Classifying documents by perspective using adaptor grammars and polarized part-of-speech tags*. M.E. Computer Science, University of Colorado at Boulder, Spring 2012.

#### B.S. SENIOR THESIS CHAIR

Tanner Van De Walle. *Algorithms for recognizing struggling and gifted students*. B.S. Computer Science, UNT, Spring 2016. Won a UNT outstanding C.S. student award.

Abhiraj Tomar. *User Modeling for Companionbots*. B.S. Computer Science and Engineering, Bits Pilani, Goa, India, Spring 2013. M.S. Computer Science, USC, Spring 2015. Now at Amazon.



## PH.D. COMMITTEES

- Harsha Gwalani. (expected 2020). Ph.D. Computer Science and Engineering, UNT, Armin Mikler chair.
- Faris Hawamdeh. (expected 2020). Ph.D. Computer Science and Engineering, UNT, Armin Mikler chair.
- Cree White. (expected 2020). Ph.D. Computer Science and Engineering, UNT, Armin Mikler chair.
- Jacob Hochstetler. (expected 2018-19). Ph.D. Computer Science and Engineering, UNT, Song Fu chair.
- Farzana Rashid. (expected 2018-19). Ph.D. Computer Science and Engineering, UNT, Eduardo Blanco chair.
- Sultanah M. Alshammari. (expected 2018). Ph.D. Computer Science and Engineering, UNT, Armin Mikler chair.
- Curtis Chambers. (expected 2018). Ph.D. Computer Science and Engineering, UNT, Ian Parberry chair.
- Joseph Helsing. (expected 2018). Ph.D. Computer Science and Engineering, UNT, Armin Mikler chair.
- Michael Jaynes. (expected 2018). *Automating CAN bus message identification*. Ph.D. Computer Science and Engineering, UNT, Ram Dantu chair.
- Samuel Johnson. (expected 2018). Ph.D. Computer Science and Engineering, UNT, Ian Parberry chair.
- Phuc Nguyen. (expected 2018). Ph.D. Computer Science and Engineering, UNT, Yan Huang chair.
- Zahra Sarabi. (expected 2018). Ph.D. Computer Science and Engineering, UNT, Eduardo Blanco chair.
- Alakananda Vempala. (expected 2018). Ph.D. Computer Science and Engineering, UNT, Eduardo Blanco chair.
- Zhi Liu. (2017). *Location estimation, local event detection, and association analysis*. Ph.D. Computer Science and Engineering, UNT, Yan Huang chair, October 2017.
- Alberto Castro-Hernandez. (2016). *Content and temporal analysis of communications to predict task cohesion in global software development teams*. Ph.D. Computer Science and Engineering, UNT, Kathy Swigger chair, December 2016.
- Mohamed Fazeen. (2014). *Modeling of intentional and unintentional security vulnerabilities in a mobile platform*. Ph.D. Computer Science and Engineering, UNT, Ram Dantu chair, December 2014.
- Bharat Dandala. (2013). *Multilingual word sense disambiguation using Wikipedia*. Ph.D. Computer Science and Engineering, UNT, Rada Mihalcea chair, June 2013. Now at IBM.
- Philip Ogren. (2010). *Coordination Resolution in Biomedical Texts*. Ph.D. Computer Science, CU Boulder, Lawrence Hunter chair, December 2010. Now at Oracle.

## M.S. COMMITTEES

Kok Koh. (2013). *Modeling alcohol consumption using blog data*. Computer Science and Engineering, UNT, Rada Mihalcea chair, Spring 2013.

Chaitra Urs. (2013). *A vehicle collision learning system using driving patterns on the road*. M.S. Computer Science and Engineering, UNT, Ram Dantu chair, Spring 2013.

Gregory Brown. (2011). *Co-Reference Relation Features*. M.S. Computer Science, CU Boulder, James Martin chair, Spring 2011.

## OTHER GRADUATE ADVISING

Masoud Narouei. *Automatic Extraction of Access Control Policies from Natural Language Documents*, January 2015 – present. Ph.D. Computer Science and Engineering. Dr. Hassan Takabi, chair.

Loc Hyunh. *Machine Learning for optimal layout*, June 2017 – June 2018. M.S. Computer Science. Dr. Gayatri Mehta, supervisor.

Yassir Hashem. *Multi-Modal Neuro-Physiological Study of Malicious Insider Threats*, September 2015 – present. Ph.D. Computer Science and Engineering. Dr. Hassan Takabi, chair.

Kaushik Madala. *Automated Identification of Component State Transition Model Elements from Requirements*, June 2016 – September 2017. Ph.D. Computer Science and Engineering. Dr. Hyunsook Do, chair.

Alok Pal. *Machine Learning for optimal layout*, December 2015 – June 2017. M.S. Computer Engineering. Dr. Gayatri Mehta, supervisor.

Stephanie Barbee. Ph.D. Learning Technologies, UNT, Spring 2017. (Now at Microsoft.)

Chu Chian (Suzanne) Chong. Ph.D. Psychology, UNT, Spring 2017.

Alexandra Peak. M.S. Linguistics, UNT, Fall 2017.

Daniela Caballero. Ph.D. Psychology, UNT, Spring 2016.

Kate Bailey. M.S. Linguistics, UNT, 2014. (Now at Lexis Nexis)

Jena Hwang. Ph.D. Linguistics, University of Colorado at Boulder, 2014.

Lee Becker. Ph.D. Computer Science, University of Colorado at Boulder, 2012. (Now Chief Data Scientist at Hapara.)

Dmitriy Dligach. Ph.D. Computer Science, University of Colorado at Boulder, 2012. (Now Assistant Professor at Loyola University Chicago.)

Les Sikos. Ph.D. Linguistics and Cognitive Science, University of Colorado at Boulder, 2010. (Now at Swarthmore)

Brian Cairns. *Machine learned ranking for clinical question answering* M.S. Computer Science, University of Colorado at Boulder, 2011. (Now at Google.)

Nirav Desai. M.S. Computer Science, University of Colorado at Boulder, 2011. (Now at IBM.)

## UNDERGRADUATE RESEARCH AND RESEARCH PROGRAMMING ADVISING

Zhaochen Gu. (2017). *I Spy project*. B.S., Computer Science, Spring 2017.

Dralia Tulley-Patton. (2017). Research topics: *NLP algorithms to classify questions for student response analysis; NLP algorithms for recognizing resistance in behavior change therapy; NLP algorithms to recognize insider security threats*. B.S., Computer Science, UNT, Spring 2017.

Tyler Hebert: Undergrad R.A. B.S., Linguistics, UNT, 2017.

Nicholas Barber: Undergrad R.A. B.S., Linguistics, UNT Spring 2017.

Tanner Van De Walle. Undergrad R.A. B.S. Computer Science and Engineering, UNT, Summer 2016.

Eberechi Akoma. (2016). *Comprehension SEEDING, ELL vocabulary generation*. Undergrad R.A. B.S. Computer Science and Engineering, UNT, Spring 2016.

Nsoh Atanga. Undergrad R.A. B.S. Computer Science and Engineering, UNT, Spring 2016.

Kristin Butts: Undergrad R.A. B.S., Linguistics, UNT, Spring 2016.

Christine Carr: Undergrad R.A. B.S., Linguistics, UNT, Spring 2016.

Daniel Wakeem Jarvis. (2016). *Comprehension SEEDING, Dynamic generation of questions in an adaptive assessment tool*. Undergrad R.A. B.S. Computer Science and Engineering, UNT, Spring 2016.

Tailyr Mack. Undergrad R.A. B.S. Computer Science and Engineering, UNT, Spring 2016.

Leigha Starr Sharp: Undergrad R.A. B.S., Linguistics, UNT, Spring 2016.

Aimee Acosta: Undergrad R.A. B.S., Linguistics, UNT, Fall 2015.

Jacob Figueroa: Undergrad R.A. B.S., Linguistics, UNT, Spring 2015. Now in UNT Linguistics M.S. program.

Ben Garside. Undergrad R.A. B.S. Computer Science and Engineering, UNT, Spring 2015. (Now at Hewlett Packard.)

Adam Hair. Undergrad R.A. B.S. Computer Science and Engineering, UNT, Spring 2015. (Now in Ph.D. program at Texas A&M.)

Kevin James. Undergrad R.A. B.S. Computer Science and Engineering, UNT, Spring 2015. (Now at Seagate.)

Austin Lane: Undergrad R.A. B.S., Linguistics, UNT, Spring 2015. Now in Austin at a text analytics company.

Darius Simmons: B.S., Computer Science, CalTech. Summer internship, 2014, NLP research.

James Gale. Undergrad R.A. B.S. Computer Science and Engineering, UNT, Spring 2014. (Now at USAA.)

Abhiraj Tomar. Undergrad R.A. B.S. Computer Science and Engineering, Bits Pilani, Goa, June 2013. (M.S. in CS at USC; Now at Amazon.)

MingYu Lin, (Bottle Rocket). Undergrad R.A. B.S. Computer Science and Engineering, UNT, December 2013.

Winner: best C.S. poster award with James Glenn, \$500 prize and \$1000 scholarship, CENG Showcase of Undergraduate Research in Engineering, September 2013.

James Glenn. Undergrad R.A. B.S. Computer Science and Engineering, UNT, May 2013.

Winner: best C.S. poster award with MingYu Lin, \$500 prize and \$1000 scholarship, CENG Showcase of Undergraduate Research in Engineering, September 2013.

Frank Paiva. Undergrad R.A. B.S. Computer Science and Engineering, UNT, May 2013.

(M.S. in C.S. at UNT; now at Amazon.)

Amy LeMessurier. Massachusetts Institute of Technology, Research Experience for Undergraduates.

Alan Mishler. University of Michigan, Research Experience for Undergraduates.

Johanna Blumenthal. Undergraduate summer research fellowship. Cognitive Science / Psychology, University of Colorado at Boulder.

Gary Knoll. B.S. Computer Science, University of Colorado at Boulder.

Ben Marsh. B.S. Computer Science, University of Colorado at Boulder.

Aaron VanBerg. Undergrad R.A. B.S. Linguistics, University of Colorado at Boulder.

#### UNT TEXAS ACADEMY OF MATHEMATICS AND SCIENCE ADVISING (UNIVERSITY-ENROLLED HIGH SCHOOL STUDENTS)

Amogh Dambal: H.S., TAMS. Research topic: *Natural language processing for formative assessment in classroom educational technology*. Expected graduation: Spring 2019.

Jeongmu (Dan) Hahn: H.S., TAMS. Research topic: *Analyzing Electroencephalogram Signals using an Optimized Support Vector Machine to Improve Communication for ALS Patients*. Expected graduation: Spring 2019.

Phi (Henry) Nguyen: H.S., TAMS. Research topic: *Grounded Natural Language Learning*. Expected graduation: Spring 2019.

Justin Xie: H.S., TAMS. Research topic: *Analyzing Electroencephalogram Signals using an Optimized Support Vector Machine to Improve Communication for ALS Patients*. Expected graduation: Spring 2019.

Pratik Kelkar: H.S., TAMS. Research topic: *Analyzing Electroencephalogram Signals using an Optimized Support Vector Machine to Improve Communication for ALS Patients*. Expected graduation: Spring 2018.

Zain Khoja: H.S., TAMS. Research topic: *Grounded Natural Language Learning*. Expected graduation: Spring 2018.

John Long: H.S., TAMS. Research topic: *Intentional high-level feature learning in deep neural networks*. Expected graduation: Spring 2018.

Karthik Nair: H.S., TAMS. Research topic: *Analyzing Electroencephalogram Signals using an Optimized Support Vector Machine to Improve Communication for ALS Patients*. Expected graduation: Spring 2018.

Ryan Peterson: H.S., TAMS. Research topic: *Intentional high-level feature learning in deep neural networks*. Expected graduation: Spring 2018.

Michelle Yakubek: H.S., TAMS. Research topics: *Learning to Parse a Lower-Resource Language, Meitei, through Alignment with a Higher-Resource Language, Burmese*; and *Casual chat in a game-playing teachable agent*. Expected graduation: Spring 2018.

Rick Zhang: H.S., TAMS. Research topic: *Predicting the next dialogue act using deep neural networks*. Expected graduation: Spring 2018.

Yuri Castro: H.S., TAMS. Research topic: *Machine Vision in Grounded Language Learning*. Graduation: Spring 2017.

Soujanya Geddam: H.S., TAMS. Research topic: *Grounded Natural Language Learning*. Graduation: Spring 2017.

Aman Gottumukkala: H.S., TAMS. Research topic: *Natural Language Processing for Educational Technology*. Graduation: Spring 2017.

Shelby Hobohm: H.S., TAMS. Research topic: *Multi-modal Human-Robot Interaction*. Graduation: Spring 2017.

Leanne Joseph: H.S., TAMS. Research topic: *Machine Vision in Grounded Language Learning*. Graduation: Spring 2017.

Andy Prevalsky: H.S., TAMS. Research topic: *Natural Language Processing for Educational Technology*. Graduation: Spring 2017.

Sara Adams: H.S., TAMS. Research topic: *Gesture in Human-Robot Interaction*. Graduation: Spring 2016.

Jacob Brunson: H.S., TAMS. Research topic: *Multi-modal Human-Robot Interaction*. Graduation: Spring 2016.

Noelle Davis: H.S., TAMS. Research topic: *Gaze recognition in Human-Robot Interaction*. Graduation: Spring 2016.

Keerat Baweja. H.S., TAMS. Research topic: *Detecting pessimistic explanatory style in a spoken dialogue system*. Winner of an NCWIT award. Graduation: Spring 2015. (Now at University of Texas, Austin.)

## COURSES TAUGHT

Machine Learning (CSCE 5215, UNT, Spring 2018)

Artificial Intelligence (CSCE 5210, UNT, Spring 2018)

Introduction to Artificial Intelligence (CSCE 4310, UNT, Spring 2018)

Machine Learning (CSCE 5215, UNT, Fall 2017)

Artificial Intelligence (CSCE 5210, UNT, Spring 2017)

Introduction to Artificial Intelligence (CSCE 4310, UNT, Spring 2017)

Introduction to Big Data and Data Science (CSCE 5933, UNT, Fall 2016)

Big Data Analytics (CSCE 4930, UNT, Spring 2016)  
Data Mining (CSCE 5380, UNT, Fall 2015)  
Advanced Topics Human-Machine Intelligence: Semisupervised and Active Learning (CSCE 6290, UNT, Spring 2015)  
Advanced Topics Human-Machine Intelligence: Cognitive Science (CSCE 6290, UNT, Fall 2014)  
Natural Language Dialogue Systems (CSCE 6933, UNT, Fall 2013)  
Computer Science II (CSCE 1040, UNT, Fall 2013)  
Semi-Supervised and Active Learning (CSCE 6933, UNT, Spring 2013)  
Natural Language Processing (CSCE 5290, UNT, Fall 2012)  
Perspective Analysis, M.E.P. (CSCI 6800, CU-Boulder, Spring 2012)  
Machine Learned Ranking, I.S. (CSCI 5900, CU-Boulder, Spring 2011)  
Perspective Analysis, M.E.P. (CSCI 6800, CU-Boulder, Spring 2011)  
Information Retrieval, Guest Lecture (CSCI 5417, CU-Boulder, Fall 2010)  
Question Answering, I.S. (CSCI 6900, CU-Boulder, Spring 2010)  
Machine Learning (CSCI 5622, CU-Boulder, Fall 2009)  
Artificial Intelligence (1989-1994, redesigned course taught to 1000s of consultants)  
Knowledge Technologies (1989-1994)  
Object-Oriented Analysis and Design (1990-2001)  
Software Engineering & Process Analysis and Modeling (1990-2001)  
Calculus (NDSU, Fall 1987, Winter 1988, Spring 1988)

## CONSULTING CLIENTS (partial list)

Allstate  
Andersen's Strategic Services Logistics  
AT&T  
Baltimore Gas & Electric  
Dade County, Florida  
Disney  
Federal Express  
Great West  
Helene Curtis  
Illinois Chamber of Commerce  
An intelligence organization

Jefferson County, Colorado  
Levolor / Newell  
Manville  
Meridian Oil  
Nestle'  
Sears  
Tennessee Department of Corrections  
McAllen Independent School District, McAllen, Texas  
Xerox

## SERVICE

Board of Advisors Member: NSF Grant Software Infrastructure for Sustained Innovation (SSE, SSI, S2I2): *SEMILAR: A Semantic Similarity Software Toolkit To Foster Knowledge-driven Innovation and Discovery*, Dr. Vasile Rus (PI), University of Memphis, Memphis, TN. (2017-2020).

Reviewer: NSF IIS, Robust Intelligence Program (2017).

Member of Faculty Search Committee, Assistant/Associate Professor, Department of Information Science, UNT, (2017-2018).

Member of Faculty Search Committee, Associate/Full Professor, Department of Information Science, UNT, (2017-2018).

Member of the Executive Committee, Department of Computer Science and Engineering, UNT, (2017-).

Member of Faculty Search Committee, Department of Computer Science and Engineering, UNT, (2016-2017).

Track Organizer: Robotics Programming; STEM Academy for underserved middle school students, July 17-21, 2017.

Reviewer for UNT Undergraduate Research Fellowship Applications (2016).

Member of UNT Visioning Committee for an Institute of Research Excellence in Big Data and Data Science (2016).

Chair of Data Science Committee, UNT Dept. of Computer Science and Engineering, to design a graduate certificate in Data Science (2015-16).

Track Organizer: Robotics Programming; STEM Academy for underserved middle school students, July 11-15, 2016.

Host site organizer for the North American Computational Linguistics Olympiad (NACLO), Open Round, January 2016. UNT is among the top 5 host sites.

Host site organizer for the North American Computational Linguistics Olympiad (NACLO), Invitational Round, March 10, 2016. First time a student hosted by UNT advanced to the International Computational Linguistics Olympiad.

Participant of UNT College of Engineering's Research Retreat to define strategies for stimulating the culture of research, January 13, 2016.

Member of UNT Carnegie Research advancement meeting with the President, Provost, VP of Research and approximately 25 other UNT professors, (2015).

Member of Faculty Search Committee, Department of Linguistics, Assistant Professor in Computational Linguistics, UNT, (2015).

Assisted Faculty Search, Department of Linguistics, Assistant Professor in Language Acquisition (2015).

Member of a visioning team to develop a new Bachelor's level degree program in Interaction Design (2015-16).

Host site organizer for the North American Computational Linguistics Olympiad (NACLO), Open Round, January 2015. UNT is among the top host sites.

Host site organizer for the North American Computational Linguistics Olympiad (NACLO), Invitational Round, March 2015.

Member of Board of Advisors: NSF Cyberlearning and Future Learning Technologies, *Talk-Back: Cyberlearning support for learning equitable mathematical practices*, Tamara Sumner, PI, University of Colorado at Boulder, Boulder, Colorado. (2015-)

Board of Advisors Member: NSF Community Research Infrastructure (CRI), *Semilar 2.0: Refining and Augmenting a Widely-used Semantic Similarity Toolkit to Increase the Pace and Foster Research in Computer and Information Sciences and Beyond*, Dr. Vasile Rus (PI), University of Memphis, Memphis, TN. (2014-)

Member of Faculty Search Committee, Department of Computer Science and Engineering, UNT, (2013-14).

Member of Graduate Committee, UNT, Dept. of Computer Science and Engineering, (2012-14).

External Examiner: *Assessing the Quality and Difficulty of Web-generated and Crowdsourced Multiple Choice Exam Questions Using Web Queries*, University of Edinburgh Ph.D. candidate; Bonnie Webber (Advisor), Johanna Moore (Internal Examiner).

Host site organizer for the North American Computational Linguistics Olympiad (NACLO), January 2014. UNT is among the top 3-6 host sites, just behind Carnegie Mellon University and Stanford.

Co-organizer: Semeval 2013 Task 7: *The Joint Student Response Analysis and 8th Recognizing Textual Entailment Challenge*, (organizers: Myroslava Dzikovska, University of Edinburgh; Rodney D. Nielsen, UNT; Chris Brew, Educational Testing Service; Claudia Leacock, CTB McGraw-Hill; Luisa Bentivogli, CELCT and FBK; Peter Clark, Vulcan Inc.; Ido Dagan, Bar-Ilan University; Hoa Trang Dang, NIST; and Danilo Giampiccolo, CELCT). At the 2013 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL:HLT) and Second Joint Conference on Lexical and



Computational Semantics (\*SEM 2013), 7th International Workshop on Semantic Evaluation (SemEval 2013). Published by the Association for Computational Linguistics. Atlanta, Georgia, USA. June 13-14, 2013.

Board of Advisors Member: *The Road Ahead for Educational Technology / Intelligent Tutoring Systems*. (2012). Board oversight by Dr. Robert Sottolare (Human Research & Engineering Directorate, Army Research Laboratory) and Drs. Xiangen Hu and Art Graesser (Institute for Intelligent Systems, University of Memphis, TN).

- *Learner Modeling Techniques*, Memphis, TN, September 9-12, 2012.

Board of Advisors Member: *NSF DR K-12 research and development proposal, "Pathways to Inquiry: Technology-Assisted Science Inquiry Assessments to Support Inquiry-Based Teaching and Learning in Earth, Life and Physical Sciences"*, Dr. Yiping Lou (PI), Louisiana State University.

Steering Committee: *The Workshop on Question Generation* (2009-10).

Chair: International workshop of the Artificial Intelligence practice at Andersen Consulting (now Accenture). 1992.

Journal Review: *Journal of Autonomous Robots*, Springer Journals (2016)

Journal Review: *Journal of Educational Technology & Society* (2016).

Journal Review: *International Journal of Artificial Intelligence in Education* (2015).

Journal Review: *Special Issue on Intelligent and Affective Learning Environments: New Trends and Challenges* (2014-15).

Journal Review: *Journal of Teaching Mathematics and Computer Science* (2013).

Journal Review: *Journal of Natural Language Engineering* (2009, 2010, 2012).

Journal Review: *Journal of Dialog and Discourse* (2011).

Program Committee: *AAAI 2016: Thirtieth Conference of the Association for the Advancement of Artificial Intelligence*, in the area of Senior Member Papers. February 12–17, 2016, Phoenix, Arizona USA.

Program Committee: *The 11th Workshop on Innovative Use of NLP for Building Educational Applications (BEA)*, 2016.

Program Committee: *EMNLP 2015: Conference on Empirical Methods in Natural Language Processing*, in the area of Discourse Dialogue and Pragmatics. September 17–21, 2015, Lisboa, Portugal.

Program Committee: *The 10th Workshop on Innovative Use of NLP for Building Educational Applications (BEA)*, 2015.

Program Committee: *EMNLP 2014: Conference on Empirical Methods in Natural Language Processing*. October 25-29, 2014. Doha, Qatar.

Program Committee: *EMBC 2014: The Engineering in Medicine and Biology Conference*. August 26-30, 2014, Chicago, Illinois, USA.

Program Committee: *ACL 2014: The 52nd Annual Meeting of the Association of Computational Linguistics (ACL2014)*. Baltimore, Maryland, June 22-27, 2014.

Program Committee: *COLING 2014: The 25th International Conference on Computational Linguistics (COLING 2014)*. Dublin, Ireland, August 23-29, 2014.

Program Committee: *The Sixteenth Conference of the European Chapter of the Association for Computational Linguistics, EACL-14*.

Program Committee: *The 9th Workshop on Innovative Use of NLP for Building Educational Applications (BEA), ACL 2014*. Baltimore, Maryland, June 22-27, 2014.

Program Committee: *The 8th Workshop on Innovative Use of NLP for Building Educational Applications (BEA), NAACL 2013*, June 9-14, Atlanta, Georgia.

Program Committee: *Computational Semantics in Clinical Text at IWCS-2013*. March 19, 2013, Potsdam, Germany.

Program Committee: *ACL 2012: The 50th Conference of the Association of Computational Linguistics*. July 8-14, Jeju, Republic of Korea.

Program Committee: *EACL-12: The Fifteenth Conference of the European Chapter of the Association for Computational Linguistics, (semantics track)*, April 23-27, Avignon, France.

Program Committee: *The 7th Workshop on Innovative Use of NLP for Building Educational Applications, NAACL 2012*, June 3-8, Montreal, Canada.

Program Committee: *ACL 2011: The 49th Conference of the Association of Computational Linguistics*, in the area of Natural Language Processing Applications. June 19-24, 2011. Portland, Oregon.

Program Committee: *FLAIRS: The 24th International Artificial Intelligence Researchers Society*, in the area of Natural Language Processing. May 18-20, 2011. Palm Beach, Florida.

Program Committee: *The Fourth Question Generation*. June 2011. Portland, Oregon.

Program Committee: *CoLING 2010: The 23rd International Conference on Computational Linguistics*, in the area of Semantics. August 23-27, 2010. Beijing, China.

Program Committee: *The Tenth International Conference on Intelligent Tutoring Systems, Workshop on Question Generation*. June 14-18, 2010. Pittsburg, Pennsylvania.

Program Committee: *EMNLP 2009: Conference on Empirical Methods in Natural Language Processing*, in the area of Summarization and Generation. August 6-7, 2009. Singapore.

Program Committee: *The Fourteenth International Conference on Artificial Intelligence in Education (AIED 2009), Workshop on Question Generation*. July 5-10. Brighton, UK.

Program Committee: *The Twelfth Conference of the European Chapter of the Association for Computational Linguistics (EACL-09)*, logic track (computational semantics and textual entailment).

Evaluation Team Lead: *Workshop on the Question Generation Shared Task and Evaluation Challenge*, NSF: Arlington, Virginia, 2008.

Director of Education for worldwide Artificial Intelligence practice at Accenture (Andersen Consulting), 1990-92. Responsibilities: chair annual conference, quality assurance for

semiannual AI class, and redesigned Introduction to AI session taught to 1000s of consultants in systems analysis & design course.

## PROFESSIONAL ORGANIZATION MEMBERSHIPS

American Medical Informatics Association

Association for the Advancement of Artificial Intelligence

Association of Computational Linguistics

Association of Computing Machinery

Institute of Electrical and Electronics Engineers

International Artificial Intelligence in Education Society