

Nichola Lubold

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RESEARCH INTERESTS

Developing intelligent, personalized dialogue systems by incorporating automatic detection and adaptation to speech phenomena such as entrainment. Exploring applications of language processing to collaborative and intelligent tutoring systems and to human-computer and human-robot interaction in general.

EDUCATION

Arizona State University, Tempe, AZ

Ph.D., Computer Science, 2013 – 2018 (Expected), GPA: 3.9, GRE: 169 V / 163 Q / 4 A

University of Notre Dame, Notre Dame, IN

B.S., Computer Engineering, 2005 – 2008 (graduated in 3 years)

PUBLICATIONS

Nichola Lubold. “Building Rapport through Dynamic Models of Acoustic-Prosodic Entrainment.” *Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems*. ACM, 2017. (In press)

Nichola Lubold, Heather Pon-Barry, and Erin Walker. “Perceptions of Social Behavior in a Voice Adaptive Robotic Learning Companion” *ACM/IEEE International Conference on Human Robot Interaction (HRI)*. 2016.

Nichola Lubold, Heather Pon-Barry, and Erin Walker. “Naturalness and Rapport in a Pitch-Adaptive Learning Companion.” In *Automatic Speech Recognition and Understanding (ASRU), 2015 IEEE Workshop*. IEEE. 2015.

Stephanie Borrie, **Nichola Lubold**, and Heather Pon-Barry. “Disordered speech disrupts conversational entrainment: a study of acoustic-prosodic entrainment and communicative success in populations with communication challenges.” *Frontiers in psychology*, 6, 2015.

Nichola Lubold, Erin Walker, and Heather Pon-Barry. “Relating Entrainment, Grounding, and Topic of Discussion in Collaborative Learning Dialogues.” In *Proceedings of the 11th International Conference on Computer Supported Collaborative Learning*, 2015.

***Nichola Lubold** and Heather Pon-Barry. “A Comparison of Acoustic-Prosodic Entrainment in Face-to-Face and Remote Collaborative Learning Dialogues.” In *Proceedings of the IEEE Workshop on Spoken Language Technologies*, 2014.

*** Awarded Best Poster Presentation at SLT 2014**

Nichola Lubold and Heather Pon-Barry. “Acoustic-Prosodic Entrainment and Rapport in Collaborative Learning Dialogues.” In *Proceedings of the ICMI Workshop on Multimodal Learning Analytics*, 2014.

Fred Morstatter, **Nichola Lubold**, Heather Pon-Barry, Jürgen Pfeffer, and Huan Liu. “Finding Eyewitness Tweets during Crises.” In *Proceedings of ACL Workshop on Language Technology and Computational Social Science*, 2014.

FELLOWSHIPS & HONORS

NCWIT Collegiate Award, Honorable Mention	2016
Google Anita Borg Memorial Scholarship	2015
Grace Hopper Celebration Scholar	2015
National Science Foundation Graduate Research Fellowship, Honorable Mention	2015
Dean’s Fellowship, Ira A. Fulton Schools of Engineering <i>4 year fellowship, awarded to 4% of all ASU doctoral students</i>	2013
Six Sigma GreenBelt, General Electric	2010
Upsilon Pi Epsilon Honor Society, University of Notre Dame	2008
Engineering Honors Program, University of Notre Dame	2008
Engineering Scholars Program, University of Notre Dame	2005

WORK EXPERIENCE

Data Science (Internship) <i>Intuit</i>	Summer 2016
<ul style="list-style-type: none">Facilitated data science as a service for internal teams by implementing machine learning algorithms and visualization technologies which could be generalized to cross-functional data	
Program Manager <i>GE Capital - Retail Bank</i>	2011 – 2013
<ul style="list-style-type: none">Managed cross-functional program focusing on service management and regulatory requirementsCoordinated and lead to completion high-budget projects impacting entire IT organization	
Technology Project Manager <i>GE Capital - Retail Bank</i>	2010 – 2011
<ul style="list-style-type: none">Managed 10 wing-to-wing network and database enhancement projectsIncreased redundancy and implemented high-availability technologies	
Information Technology Leadership Program <i>GE Capital</i>	2008 – 2010
<ul style="list-style-type: none">Completed four 6-month rotations in project management and software engineering, including leading life-cycle management, trading platform integrations, and divestiture activities	

RESEARCH

Research Assistant **2014 – Present**

Arizona State University

- Incorporating speech into tangible activities for mathematical problem solving
- Analyzing the impact of speech and manipulating speech to enhance HCI and HRI interactions

Advisor: Erin Walker, CIDSE

Research Assistant **2013 – 2014**

Arizona State University

- Analyzed automatic detection of common ground and rapport in spoken language, exploring entrainment, a phenomenon of speech where speakers become more similar over time

Advisor: Heather Pon-Barry, CIDSE

Research Assistant **Jan. 2014 – Aug. 2014**

Arizona State University

- Ran experiments investigating intelligent tutoring system applications for assisting middle school and high school math teachers in the classroom during collaborative activities.

Advisor: Kurt VanLehn, CIDSE

Research Assistant **2006 – 2008**

University of Notre Dame

- Investigated biometric algorithms and techniques for reducing false positives in fingerprint and iris pattern recognition

Advisor: Kevin W. Bowyer, Dept. of Computer Science & Engineering

TEACHING EXPERIENCE

EPICS Mentor **2015 – Present**

Arizona State University

FSE 104/494 – mentor student teams as a part of Engineering Projects in Community Service

Instructor **2016**

Arizona State University

ASU 101 – 6 sections (135 students) focusing on the ASU Experience and an introduction to the Fulton Schools of Engineering and Computer Science department.

Instructor **2014**

Arizona State University

CSE 110 Introduction to Java – taught 117 students

Teaching Assistant **2013**

Arizona State University

CSE 476 / 598 Introduction to Natural Language Processing

PRESENTATIONS

Oral Presentations

“Perceptions of Social Behavior in a Voice Adaptive Robotic Learning Companion.” 11th ACM/IEEE International Conference on Human Robot Interaction, 2016.

“Entrainment and Rapport in Collaborative Learning Dialogues.” Third Multimodal Learning Analytics, ICMI 2014

“The Validity of Fingerprint Recognition.” University of Notre Dame Undergraduate Scholar’s Conference, 2008

Poster Presentations

“Naturalness and Rapport in a Pitch-Adaptive Learning Companion.” IEEE Automatic Speech Recognition and Understanding Workshop, 2015.

“Finding Eyewitness’ Tweets During Crisis.” ACL Workshop on Language Technology and Computational Social Science, ACL, 2014.

“A Comparison of Spoken Dialogue in Face-to-Face and Remote Collaborative Learning Environments.” IEEE Spoken Language Technology Workshop, 2014.

“Relating Entrainment, Grounding, and Topic of Discussion in Collaborative Learning Dialogues.” Computer Supported Collaborative Learning, 2015.

MANUSCRIPTS

Validity of Fingerprint Recognition, Senior Thesis, 2008 Investigated improvements to latent print pattern recognition

COMMUNITY SERVICE

Board member, Xavier College Preparatory Technology Board, 2014 – Present

Co-President, Women in Computer Science Society, 2014 – 2016

Reviewer, 2014, ICWSM (International AAAI Conference on Weblogs and Social Media)

Volunteer Teacher, Junior Achievement, 2009 – 2012

Outreach Coordinator, GE Capital ITLP, 2008 – 2009

COMMUNITY MEMBERSHIP

Association for Computational Linguistics, 2014

Institute of Electrical and Electronics Engineers, 2014

Women in Computer Science, ASU, 2013

Graduate Women’s Association, ASU, 2013

Association for Computing Machinery, 2013

The Society of Women Engineers, 2013

OTHER ACHIEVEMENTS

ServiceNow Certified System Administrator, 2011
ITIL Foundations V3 (135538), 2011

COURSEWORK

FALL 2013

CSE 571 – Artificial Intelligence
CSE 591 – Technologies for Online Learning Communities
CSE 790 – Reading and Conference

SPRING 2014

CSE 598 – Design and Analysis of Algorithms
CSE 598 – Intelligent Interactive Instructional Systems
CSE 790 – Reading and Conference

FALL 2014

PSY 531 – Multiple Regression

SPRING 2015

CSE 555 – Theory of Computation
PSY 530 – Intermed Statistics
CSE 790 – Reading and Conference

FALL 2015

CSE 565 – Software Verification, Validation, and Testing
EDP 540 – Theoretical Views of Learning
CSE 790 – Reading and Conference

SPRING 2016

CSE 566 – Software Project/Process/Quality Management
CSE 575 – Statistical Machine Learning
CSE 691 – Logical & Distributional Semantics of Natural Language

FALL 2016

CSE 572 – Data Mining
SHS 598 – Speech and Audio Processing and Perception