

Laura M. Pfeifer Vardoulakis

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Human-Computer Interaction researcher, creating and evaluating health technologies designed specifically for patients.

Education

Northeastern University, Boston, MA expected Summer 2012
Ph.D., Computer Science - Human-Computer Interaction
Advisor: Dr. Timothy Bickmore

Northeastern University, Boston, MA 2008
M.Sc., Computer Science

Augustana College, Sioux Falls, SD 2002
B.A., cum laude, Computer Science, Spanish

Employment

Northeastern University, Boston, MA September 2006-present
Research Assistant, Relational Agents Group

Selected Projects

The Drinks Project: Conducting Automated Interviews for Longitudinal Health Follow-up (Ph.D. Thesis)

Methods for conducting automatic, long-term health interviews that maximize the quality and quantity of self-reported data.

Roles: research study design, IRB application, software design and implementation, recruitment, data analysis, author
Study design: between-subjects experimental design, longitudinal, quantitative, web-based, 360 participants

Virtual Nurse: An Embodied Conversational Agent for Hospital Discharge

Roles: technical project lead, software implementation and integration, pilot study design, pilot study lead researcher, patient interviewer, data analysis, author

Study design: hospital field study, demonstration design, mixed-methods, 49 participants

Tinker: A Virtual Agent Exhibit at the Boston Museum of Science

Roles: technical project lead, software implementation, pilot study design, author

Study design: field study, between-subjects experimental design, quantitative, 1,607 participants

Users to-date: 156,000 museum guests

Microsoft Research, Redmond, WA May 2011 – July 2011
Research Intern, Computational User Experiences (CUE) Group
Mentors: Amy Karlson, Dan Morris

A Mobile Phone Experience for Emergency Department Patients, Providing Near Real-Time Access to their Medical Record

Roles: software implementation, study design, recruitment, patient interviewer, data analysis, author

Study design: hospital field study, demonstration design, mixed-methods, 44 participants

ProVation Medical – Wolters Kluwer Health, Minneapolis, MN July 2003 – August 2006
Senior Technical Support Analyst

Provided technical support to hospital database administrators, software administrators, and users of ProVation software at ~200 locations. Taught day-long courses to software administrators of new hospital customers. Delivered onsite software installations at seven hospitals and surgery centers across the United States.

Publications

Journals Articles

- [J.5] Response to a Relational Agent by Hospital Patients with Depressive Symptoms.
Bickmore, T., Mitchell, S., Jack, B., Paasche-Orlow, M., **Pfeifer, L.**, O'Donnell, J.
Interacting with Computers, special issue on Mental Health, 2010, 22(4), 289-298.
- [J.4] Maintaining Reality: Relational Agents for Antipsychotic Medication Adherence.
Bickmore, T., Puskar., K, Schlenk, E., **Pfeifer, L.**, Sereika, S.
Interacting with Computers, special issue on Mental Health, 2010, 22(4), 276-288.
- [J.3] Usability of Conversational Agents by Patients with Inadequate Health Literacy: Evidence from Two Clinical Trials.
Bickmore, T., **Pfeifer, L.**, Byron, D., Forsythe, S., Henault, L., Jack, B., Silliman, R., Paasche-Orlow, M.
Journal of Health Communication, 2010, 15, 197-210.
- [J.2] Using Computer Agents to Explain Medical Documents to Patients with Low Health Literacy.
Bickmore, T., **Pfeifer, L.**, and Paasche-Orlow, M.
Patient Education and Counseling, 2009, 75 (3), 315-320.
- [J.1] The Role of Gesture in Document Explanation by Embodied Conversational Agents.
Bickmore, T., **Pfeifer, L.**, and Yin, L.
International Journal of Semantic Computing. 2008, 2 (1), 47-70.

Conference Papers

- [C.6] Using Mobile Phones to Present Medical Information to Hospital Patients.
Pfeifer Vardoulakis, L., Karlson, A., Morris, D., Smith, G., Gatewood, J. Tan, D.
To appear in: *Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)*, 2012.
- [C.5] Relational Agents Improve Engagement and Learning in Science Museum Visitors.
Bickmore, T., **Pfeifer, L.**, Schulman, D.
Intelligent Virtual Agents. Reykjavik, Iceland, September 2011. **Best Paper nomination.**
- [C.4] Is the Media Equation a Flash in the Pan? The Durability and Longevity of Social Responses to Computers.
Pfeifer, L., and Bickmore, T.
Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI), Vancouver, BC, May 2011.
- [C.3] Should Agents Talk Like, um, Humans? The Use of Conversational Fillers by Virtual Agents.
Pfeifer, L., and Bickmore, T.
Intelligent Virtual Agents. Amsterdam, The Netherlands, September 2009.
- [C.2] Taking the Time to Care: Empowering Low Health Literacy Hospital Patients with Virtual Nurse Agents.
Bickmore, T., **Pfeifer, L.**, and Jack, B.
Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI), Boston, MA, April 2009.
- [C.1] Health Document Explanation by Virtual Agents.
Bickmore, T., **Pfeifer, L.**, and Paasche-Orlow, M.
Intelligent Virtual Agents. Paris, France, September 2007.

Conference Workshops and Posters (Peer Reviewed)

- [c.5] Longitudinal Remote Follow-Up by Intelligent Conversational Agents for Post-Hospitalization.
Pfeifer, L., Bickmore, T.
AAAI 2011 *Spring Symposium on Artificial Intelligence and Health Communication*, Palo Alto, CA. March 2011.
- [c.4] Designing Embodied Conversational Agents to Conduct Longitudinal Health Interviews.
Pfeifer, L., and Bickmore, T.
Intelligent Virtual Agents. Philadelphia, PA. September 2010.

- [c.3] Longitudinal Health Interviewing by Embodied Conversational Agents: Directions for Future Research.
Pfeifer, L., and Bickmore, T.
AAAI 2009 Fall Symposium on Virtual Healthcare Interaction, Washington D.C. November 2009.
- [c.2] Public Displays of Affect: Deploying Relational Agents in Public Spaces.
Bickmore, T. and **Pfeifer, L.**, Schulman, D., Perera, S., Senanayake, C. and Nazmi, I.
CHI'08 Extended Abstracts. Florence, Italy, April 2008.
- [c.1] Relational Agents for Antipsychotic Medication Adherence.
Bickmore, T. and **Pfeifer, L.**
CHI 2008 Workshop on Technology in Mental Health. Florence, Italy, April 2008.

Invited Talks

- [I.4] Embodied Conversational Agents for Long-Term Health Monitoring. Presented at Healthrageous!, Boston, MA, October 2011.
- [I.3] Patient-Computer Interaction. Presented at the Dot Diva Launch, Microsoft Research New England, Cambridge, MA, September 2010.
- [I.2] Virtual Nurse Agents for Hospital Discharge. Presented at the Northeastern University Board of Trustees annual meeting. Boston, MA, May 2009.
- [I.1] Health Document Explanation by Relational Agents. Presented at the New England Electronic-Media and Behavior Change Interest Group Quarterly Meeting. Newton, MA, October 2008.

Teaching

Human-Computer Interaction (CS5340), Northeastern

Fall 2006, Fall 2008

Teaching Assistant for Prof. Timothy Bickmore

Graded and provided feedback on class assignments. Provided mentorship for project teams designing user interfaces for older adults. Coordinated user-testing of student projects by older adults at a local apartment complex.

Department Tutor, Augustana College

September 2000 – May 2002

Assisted students with program design and development. Tested, debugged and graded programming assignments.

Awards

Best Paper nomination, Intelligent Virtual Agents Conference (2011)
Northeastern University Outstanding Graduate Research Award (2009)

Service

Reviewer

CHI 2010-2012

IVA 2011

Virtual Reality (Springer) 2009

Women in Computing

DigiGirlz, Microsoft New England, 2011

Dot Diva, Microsoft New England, 2012

Augustana College Women in Computer Science, 2000-2002