Ryan Carlson

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Objective I aim to create engaging and effective educational experiences through software engineering, data mining, and learning science principles.

Education

Language Technologies Institute, Carnegie Mellon University, Pittsburgh, PA (2011 - 2013)
Master of Science in Language Technologies. Fellow in the Program for Interdisciplinary Education Research (PIER).

Swarthmore College, Swarthmore, PA (2007 - 2011)
Graduated with Honors. Major in Computer Science, Minor in Cognitive Science.

Professional Experience

Research Programmer, *Carnegie Learning*, Pittsburgh, PA (Feb. 2014 – present)

- Designed and implemented an AngularJS tool with a Django backend allowing non-technical content designers to author computer-driven math tutors. Led to significant increase in the company's content output.
- Designed and implemented a highly configurable iPad game framework to help develop students' number fluency.
- Conducted field studies to test game efficacy, constructing interventions based on non-cognitive factors.
- Instrumented fine-grained behavioral data tracking; ran statistical analyses to understand interventions' effects.
- Wrote and edited grant proposals for the research department.

Software Engineering Intern, Google Maps for Android, *Google*, Mountain View, CA (May – Aug. 2013)

- Created framework to enhance benchmark reliability by making tests network-independent.
- Improved Places Pages, offering user additional details about a business.

Software Engineer, *Safaba Translation Solutions*, Pittsburgh, PA (Nov. 2011 – Dec. 2013)

- Built machine translation systems customized to client demands.
- Analyzed translation quality and generated fixes to improve our engines.
- Developed SSL-encrypted translation server used by our clients.

Lead Mobile Developer, *Ludo Mechanica*, Pittsburgh, PA (Aug. 2012 – May 2013)

- Developed DropKicker, an Android app to help users change their habits.
- Worked with a small team to design the app specifications and visual direction.

Publications

R. Carlson, K. Genin, M. Rau, and R. Scheines. Student Profiling from Tutoring System Log Data: When do Multiple Graphical Representations Matter? In Proc. Conference on Educational Data Mining, July 2013.

I. Goldin and **R. Carlson**. Learner Differences and Hint Content. In Proc. Conference on Artificial Intelligence in Education, July 2013.

R. Carlson, V. Keiser, N. Matsuda, K. R. Koedinger, C. P. Rosé. Building a Conversational SimStudent. In Proc. Conference on Intelligent Tutoring Systems, pages 563-569, June 2012 (Short Paper).

A. Ogan, S. Finkelstein, E. Walker, **R. Carlson**, and J. Cassell. Rudeness and Rapport: Insults and Learning Gains in Peer Tutoring. In Proc. Conference on Intelligent Tutoring Systems, pages 11-21, June 2012.

A. Stromme, **R. Carlson**, and T. Newhall. Chestnut: A GPU Programming Language for Non-Experts. In Proc. ACM Workshop on Programming Models and Applications for Multicores and Manycores, pages 156-167, Feb 2012.

R. Carlson and A. Danner. Bridge detection in grid terrains and improved drainage enforcement. In Proc. ACM Symposium on Advances in Geographic Information Systems, pages 250–260, Nov 2010.

Skills

Computer Languages *(Proficient)* JavaScript, Python, HTML, CSS, Objective-C, C, Java, R, Bash; *(Familiar)* C++, Lisp (CL/Scheme), PostgreSQL.
(My Favorite) Tools Git, Atom, OmniGraffle, GIMP, Inkscape.