Steve Oney

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University of Michigan
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(updated Dec 2019)

Education

09/2008 – 04/2015 **Carnegie Mellon University (School of Computer Science)**
Pittsburgh, PA PhD in Human-Computer Interaction (thesis T.2 below)
MS in Human-Computer Interaction
Advisors: Brad Myers and Joel Brandt (Adobe Research)
Committee: Scott Hudson and John Zimmerman

09/2003 – 08/2008 **Massachusetts Institute of Technology**
Cambridge, MA MEng in Computer Science (thesis T.1 below)
SB in Computer Science
SB in Mathematics

Professional Experience

09/2016 – present **School of Information, University of Michigan**
Ann Arbor, MI Assistant Professor

01/2017 – present **Computer Science and Engineering, University of Michigan**
Ann Arbor, MI Assistant Professor (by courtesy)

09/2015 – 09/2016 **School of Information, University of Michigan**
Ann Arbor, MI Post Doctoral Presidential Fellow

09/2008 – 04/2015 **Carnegie Mellon University (Human-Computer Interaction Institute)**
Pittsburgh, PA Graduate Student and researcher

03/2013 – 06/2013 **Advanced Technologies Labs, Adobe Systems, Research Intern**
San Francisco, CA Continued CMU work on InterState, an interactive editor for creating highly interactive interfaces. (C.8)

06/2011 – 09/2011 **Advanced Technologies Labs, Adobe Systems, Research Intern**
San Francisco, CA Developed and evaluated "Codelets", interactive documentation intended to help developers use example code snippets. (C.4)

05/2009 – 08/2009 **IBM Research, Almaden, Research Intern**
San Jose, CA Developed Playbook, a system that turns Photoshop drawings into interactive prototypes through programming-by-demonstration, conducted informal interviews with designers to develop design requirements. (C.3)

01/2007 – 08/2008 **MIT Media Laboratory, Cognitive Machines Group, Researcher**
Cambridge, MA Annotated baseball footage to train a system that automatically determines context from video frame content, wrote scripts to automate statistic gathering, and developed a system to search for statistics with natural language. (T.1)

Publications

Labels:
🏆 *best paper award*
🎗 *honorable mention for best paper award*

Approximate acceptance rates:
UIST: 22%, CHI: 23%, VL/HCC: 30%, CSCW: 25%, ICSE: 19%

Heavily-reviewed Conference Papers (C) and Journal Manuscripts (J)

C.21 Chen, Y., Pandey, M., Song, J., Lasecki, W., **Oney, S.** (2020) Improving Crowd-Supported GUI Testing with Structural Guidance ACM *Conference on Human Factors in Computing Systems (CHI)*, Honolulu, Hawai'i, USA. April 25–30. to appear.

C.20 Pandey, M., Subramonyam, H., **Oney, S.**, O'Modhrain, S. (2020) Explore, Create, Annotate: Designing Digital Drawing Tools with Visually Impaired People ACM *Conference on Human Factors in Computing Systems (CHI)*, Honolulu, Hawai'i, USA. April 25–30. to appear.

C.19 Wang, Y., Wu, Z., Brooks, C., **Oney, S.** (2020) Callisto: Capturing the "Why" by Connecting Conversations with Computational Narratives ACM *Conference on Human Factors in Computing Systems (CHI)*, Honolulu, Hawai'i, USA. April 25–30. to appear.

🏆 *J.18* *(PDF)* Wang, Y., Mittal, A., Brooks, C., **Oney, S.** (2019) How Data Scientists Use Computational Notebooks for Real-Time Collaboration ACM *Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)*, Austin, TX, USA. November 9–13. Volume 3, Article No. 39.

🏆* *C.17* *(PDF)* Zhang, L., **Oney, S.** (2019) Studying the Benefits and Challenges of Immersive Dataflow Programming. *IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*, Memphis, TN, USA. October 14–18. pp 223–227.

🎗 *C.16* *(PDF)* **Oney, S.**, Krosnick, R., Brandt, J., Myers, B. (2019) Implementing Multi-Touch Gestures with Touch Groups and Cross Events. ACM *Conference on Human Factors in Computing Systems (CHI)*, Glasgow, Scotland. May 4–9. Paper No. 355

J.15 *(PDF)* **Oney, S.**, Brooks, C., Resnick, P. (2018) Creating Guided Code Explanations with chat.codes. ACM *Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)*, New York, NY, USA. November 3–7. Volume 2, Article No. 131.

C.14 *(PDF)* Krosnick, R., Lee, S. W., Lasecki, W., **Oney, S.** (2018) Expresso: Building Responsive Interfaces with Keyframes. *IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*, Lisbon, Portugal. October 1–4. pp 39–47.

* *Best short paper award*

C.13 (PDF) **Oney, S.**, Lundgard, A., Krosnick, R., Nebeling, M., Lasecki, W. (2018) Arboretum and Arbility: Improving Web Accessibility Through a Shared Browsing Architecture. ACM *Symposium on User Interface Software and Technology (UIST)*, Berlin, Germany, October 14–17. pp 937–949.

C.12 (PDF) Lin, S.C., Hsu, C.H., Talamonti, W., Zhang, Y., **Oney, S.**, Tang, L., Mars, J. (2018) Adasa: In-Vehicle Digital Assistant for Advanced Driver Assistance Features. ACM *Symposium on User Interface Software and Technology (UIST)*, Berlin, Germany, October 14–17. pp 531–542.

C.11 (PDF) Chen, Y., Lee, S. W., Xie, Y., Yang, Y., Lasecki, W., **Oney, S.** (2017) Codeon: On-Demand Software Development Assistance ACM *Conference on Human Factors in Computing Systems (CHI)*, Denver, CO, USA May 6–11. pp 6220–6231.

C.10 (PDF) Rong, X., Yan, S., **Oney, S.**, Dontcheva, M., Adar, E. (2016) CodeMend: Assisting Interactive Programming with Bimodal Embedding. ACM *Symposium on User Interface Software and Technology (UIST)*, Tokyo, Japan, October 16–19. pp 247–258.

C.9 (PDF) Chen, Y., **Oney, S.**, and Lasecki, W. (2016) Towards Providing On-Demand Expert Support for Software Developers. ACM *Conference on Human Factors in Computing Systems (CHI)*, San Jose, CA, USA, May 7–12. pp 3192–3203.

C.8 (PDF) **Oney, S.**, Myers, B., Brandt, J. (2014) InterState: A Language and Environment for Expressing Interface Behavior. ACM *Symposium on User Interface Software and Technology (UIST)*, Honolulu, HI, USA, October 5–8. pp 263–272.

C.7 (PDF) **Oney, S.**, Harrison, C., Ogan, A., Wiese, J. (2013) ZoomBoard: A Diminutive QWERTY Soft Keyboard Using Iterative Zooming for Ultra-Small Devices. ACM *Conference on Human Factors in Computing Systems (CHI)*, Paris, France, April 27 – May 2. pp 2799–3002

C.6 (PDF) **Oney, S.**, Myers, B., Brandt, J. (2012) ConstraintJS: Programming Interactive Behaviors for the Web by Integrating Constraints and States. ACM *Symposium on User Interface Software and Technology (UIST)*, Cambridge, MA, USA, October 7–10. pp 229–238

C.5 (PDF) Pandita, R., Xiao, X., Zhong, H., Xie, T., **Oney, S.**, Paradkar, A. (2012) Inferring Method Specifications from Natural Language API Descriptions. *International Conference on Software Engineering (ICSE)*, Zürich, Switzerland, June 2–9. pp 815–825

C.4 (PDF) **Oney, S.**, Brandt, J. (2012) Codelets: Linking Interactive Documentation and Example Code in the Editor. ACM *Conference on Human Factors in Computing Systems (CHI)*, Austin, TX, USA, May 5–10. pp 2697–2706

C.3 (PDF) **Oney, S.**, Barton, J., Myers, B., Lau, T., and Nichols, J. (2011) Playbook: Revision Control & Comparison for Interactive Mockups. *International Symposium on End-User Development (IS-EUD)*, Torre Canne, Italy, June 7–10. pp 295–300

C.2 (PDF) Ozenc, K., Kim, M., Zimmerman, J., **Oney, S.**, and Myers, B. (2010). How to Support Designers in Getting Hold of the Immaterial Material of Software. ACM *Conference on Human Factors in Computing Systems (CHI)*, Atlanta, GA, USA, April 10–15. pp 2513–2522

C.1 **Oney, S.**, Myers, B. (2009). FireCrystal: Understanding Interactive Behaviors in Dy-
(PDF) namic Web Pages. *IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*, Corvallis, OR, USA, September 20–24. pp 105–108

Book Chapters (B)

B.1 Myers, B., Ko, A., Scaffidi, C., **Oney, S.**, Yoon, Y.S., Chang, K, Kery, M.B., and Li,
(PDF) T. (2016). Making End User Development More Natural, in *Advances in End User Development*, pp 1–22

Refereed Posters (P), Workshops (W), and Doctoral Consortiums (D)

P.10 Pandey, M., Nebeling, M., Park, S.Y., **Oney, S.** (2019). Exploring the Tracking Needs
(PDF) and Practices of Recreational Athletes. Poster at *PervasiveHealth*. Trento, Italy.

W.9 Wang, A., **Oney, S.**, Brooks, C. (2019). Redesigning Notebooks for Data Science
(PDF) Education. Human-Centered Study of Data Science Work Practices Workshop, *ACM Conference on Human Factors in Computing Systems (CHI)*. Glasgow, Scotland.

W.8 Spinelli, L., Pandey, M., **Oney, S.** (2018). Attention Patterns for Code Animations:
(PDF) Using Eye Trackers to Evaluate Dynamic Code Presentation Techniques. *Programming Experience (PX/18)*. Nice, France.

W.7 Chen, Y., **Oney, S.**, Lasecki, W. (2016). Expert Crowd Support Systems for Software
(PDF) Developers. *Collective Intelligence 2016*, New York, NY, USA June 1–3.

W.6 **Oney, S.**, Myers, B., Brandt, J. (2013). Euclase: A Live Development Environment
(PDF) with Constraints and FSMs. International Workshop on Live Programming, *International Conference on Software Engineering (ICSE)*, San Francisco, CA, USA, May 19.

W.5 Myers, B., **Oney, S.**, Yoon, Y., Brandt, J. (2013). Creativity Support in Authoring and
(PDF) Backtracking. Workshop on Evaluation Methods for Creativity Support Environments, *ACM Conference on Human Factors in Computing Systems (CHI)*, Paris, France, April 28.

D.4 **Oney, S.** (2011) Development Tools for Interactive Behaviors. *Doctoral Consortium:*
(PDF) *International Symposium on End-User Development (IS-EUD)*, Torre Canne, Italy, June 7–10. pp 395–398

D.3 **Oney, S.** (2010) Democratizing Computational Tools for Interaction Designers. *Doc-*
(PDF) *toral Consortium: IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*, Madrid, Spain, September 21–25. pp 249–250

D.2 **Oney, S.** (2009) Empowering Designers with Creativity Support Tools. Doctoral
(PDF) Consortium: IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC), Corvallis, OR, USA, September 20–24. pp 254–255

W.1 **Oney, S.**, Myers, B., and Zimmerman, J. (2009). Visions for Euclase: Ideas for
(PDF) Supporting Creativity through Better Prototyping of Behaviors. Workshop on Computational Creativity, *ACM Conference on Human Factors in Computing Systems (CHI)*, Boston, MA, USA, April 4

Theses (T)

T.2 **Oney, S.** (2015). Expressing Interactivity with States and Constraints. *Carnegie Mellon Ph.D Thesis*, Pittsburgh, PA, USA, April.
(PDF)

T.1 **Oney, S.** (2008). Natural Language Search of Structured Documents. *MIT M.Eng Thesis*, Cambridge, MA, USA, August.
(PDF)

Grants

07/2019 **Applying Literate Programming Approaches to Support Semantic Annotation**
$10,875 Team: Andrea Thomer and Steve Oney
Sponsor: The U-M Office of Research (UMOR)

10/2019 **Scalable Remote Peer Help for Programming Education**
$598,926 Team: Steve Oney, Paul Resnick, and Christopher Brooks
Sponsor: National Science Foundation (NSF)
Program: Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR)

01/2018 **Designing Scalable Help Tools for Programming Courses**
$174,981.00 Team: Steve Oney
Sponsor: National Science Foundation (NSF)
Program: Cyber-Human Systems (CHS) CRII

11/2017 **Prototyping Tools to Improve Crowd Based Training for IVA Development**
$37,000.00 Team: Steve Oney and Walter Lasecki
Sponsor: Clinc, Inc.

04/2017 **End-user techniques for aggregating and analyzing exercise and physical data**
$198,327.00 Team: Steve Oney, Michael Nebeling and Sun Young Park
Sponsor: Exercise Science & Sports Initiative

Awards

Note: Does not include best paper awards or nominations (noted in Publications above)

09/2015 **University of Michigan's President's Postdoctoral Fellowship**

10/2009 **UIST (ACM Symposium on User Interface Software and Technology) Student Innovation Contest, 1st place**
Part of winning team in most creative category

09/2009 **Google/UNCF (United Negro College Fund) Scholarship**
One-year scholarship for $10,000

09/2009 – 05/2012 **Ford Foundation Predoctoral Fellowship**
Annual stipend of $20,000 for three years Awarded to 60 doctoral students nationwide across disciplines

09/2008 – 05/2011 **ARCS (Achievement Rewards for College Scientists) Foundation Scholarship (Pittsburgh Chapter)**
Annual stipend of $5,000 for three years Awarded to 13 doctoral students in Pittsburgh area (CMU & Univ. of Pitt.)

09/2008 **MIT Battlecode Open Programming Competition Finalist**

09/2008 **New England Women's and Men's Athl. Conf., Academic All-Conference**
Awarded for academic success while a member of MIT's varsity Track team

Invited Presentations

11/2019 **Indiana University**
Bloomington, IN Designing Tools for Remote Communication and Collaboration

11/2018 **Williams College**
Williamstown, MA CS Colloquium — Designing Tools for More Effective Remote Communication

11/2017 **University of Wisconsin**
Madison, WI HCI Seminar: Designing Tools for Remote Communication Between Programmers

03/2016 **University of Michigan School of Information**
Ann Arbor, MI Programming Tools that Speak our Language

10/2015 **University of Notre Dame Department of Computer Science and Engineering**
South Bend, IN Expressing Interactivity with States and Constraints

04/2015 **University of Illinois at Chicago Department of Computer Science**
Chicago, IL Expressing Interactivity with States and Constraints

03/2015 **Boston University Department of Computer Science**
Boston, MA Expressing Interactivity with States and Constraints

03/2015 **FX Palo Alto Laboratory**
Palo Alto, CA Expressing Interactivity with States and Constraints

03/2015 **Stony Brook University Computer Science Department**
Stony Brook, NY Expressing Interactivity with States and Constraints

02/2015 **University of California at Irvine Department of Informatics**
Irvine, CA Expressing Interactivity with States and Constraints

03/2010 **Dagstuhl: Practical Software Testing: Tool Automation and Human Factors**
Dagstuhl, Germany

06/2009 **IBM Almaden Lunch Seminar**
San Jose, CA FireCrystal: Understanding Interactive Behaviors in Dynamic Web Pages

Service

Program Committee

2019 International Workshop on Eye Movements in Programming (EMIP)

2019 ACM Conference on Tangible, Embedded, and Embodied Interactions (TEI)

2019 Tech Notes for the ACM SIGCHI Symposium on Engineering Interactive Computing Systems (EICS)

2017, 2018, 2020 ACM Symposium on User Interface Software and Technology (UIST)

2018, 2020 ACM International Conference on Supporting Group Work (GROUP)

2017 – 2020 Programming Experience Workshop (PX)

2016 – 2020 ACM Conference on Human Factors in Computing Systems (CHI)

Peer Reviewing

2018 IEEE Transactions on Software Engineering (TSE)

2018 ACM Transactions on Computer-Human Interaction (TOCHI)

2010 – 2016 ACM Conference on Human Factors in Computing Systems (CHI)

2011 – 2015 ACM Symposium on User Interface Software & Technology (UIST)

2014 Conference on Human-Computer Interaction with Mobile Devices (MobileHCI)

2010, 2012 ACM Conference on Designing Interactive Systems (DIS)

2008, 2009 Philippine Journal of Science (PJS)

Operations Committee

2012 – 2015 ACM CHI operations committee (mobile program)

2013 – 2015 ACM UIST operations committee (mobile program)

2013 – 2015 ACM ITS operations committee (mobile program)

2012 ACM UbiComp organizer (mobile guide)

2010, 2011 ACM CHI mobile guide development team

2010, 2011 ACM CHI student volunteer

UMSI

2018 – 2019 School of Information BSI Committee

2018 – 2019 University of Michigan Interactive and Social Computing (MISC) coordinator

2016 – 2017 United Way Unit Representative

Other

2009 – 2015 CMU Computer Science outreach roadshow volunteer (with Women@SCS & SCS4All)

2011 – 2014 CMU Human-Computer Interaction Institute (HCII) ombudsman

2010 CMU Human-Computer Interaction Institute (HCII) visit weekend co-chair

2009, 2010 CMU HCII PhD lunch coordinator

Teaching

2019
University of Michigan & Coursera
Python 3 Programming Specialization
https://www.coursera.org/specializations/python-3-programming

2016 – present
University of Michigan
Instructor – SI 106 (Programs, Information & People)

Fall 2016
University of Michigan
Instructor – SI 506 (Programming 1)

09/2012 – 12/2012
Carnegie Mellon
Instructor – Web Lab, Programming User Interfaces
Developed syllabus, wrote lectures, created projects, presented, graded, and held office hours weekly. Instructor rating: 4.7/5.0

09/2010 – 12/2010
Carnegie Mellon
Instructor – GUI Lab, Programming User Interfaces
Developed syllabus, wrote lectures, created projects, presented, graded, and held office hours weekly. Instructor rating: 4.6/5.0

09/2007 – 05/2008
MIT
Teaching Assistant – Intro. to Computers and Problem Solving
Taught three recitation sections per week, held weekly office hours, and graded students' exams

06/2007 – 08/2007
MIT
Teaching Assistant – Interphase Physics I
Taught three classes per week, held weekly office hours, and mentored a group of incoming MIT freshmen

02/2005 – 05/2005
MIT
Teaching Assistant – Technology Enabled Learning (TEAL) Physics II

02/2005 – 12/2006
MIT
Laboratory Assistant – Circuits and Electronics

09/2006 – 12/2006
MIT
Laboratory Assistant – Computational Structures

Students Supervised

Ph.D. Advisees

09/2018 – present **Lei Zhang (School of Information)**
University of Michigan (ongoing)

09/2018 – present **(Mauli) Maulishree Pandey (School of Information)**
University of Michigan (ongoing, co-advised with Sile O'Modhrain)

09/2018 – present **(April) Yi Wang (School of Information)**
University of Michigan (ongoing, co-advised with Christopher Brooks)

09/2017 – present **Rebecca Krosnick (Computer Science & Engineering)**
University of Michigan (ongoing, co-advised with Walter Lasecki)

09/2015 – present **Yan Chen (School of Information)**
University of Michigan (ongoing, co-advised with Walter Lasecki)

Thesis Committees

2019 **Ph.D.: Shih-Chieh Lin (Computer Science and Engineering)**
University of Michigan Cross-Layer System Design for Autonomous Driving

2017 **Ph.D.: Sang Won Lee (Computer Science and Engineering)**
University of Michigan Improving User Involvement Through Live, Collaborative Creation

2017 **Ph.D.: Xin Rong (School of Information)**
University of Michigan Neural Language Models for Data-Driven Programming Support

2019 **M.S.: Katy Madier (School of Information)**
University of Michigan Enabling Low-cost Co-located Virtual Reality Experiences

2018 **M.S.: Maulishree Pandey (School of Information)**
University of Michigan Exploring and Designing for the Self-Tracking Needs of Recreational Athletes

Press

VentureBeat, 2014 "Adobe and CMU researchers unveil a brilliant new JavaScript library: ConstraintJS." June 23

Wired, 2013 "Researchers Figure Out How You Can Type on a Smartwatch." May 1

Slashdot, 2013 "CMU Offers Wee QWERTY Texting Tech for Impossibly Tiny Devices." May 1

Gizmodo, 2013 "How Typing on a Smart Watch Might Actually Make Sense." April 29

MIT Tech Rev., 2013 "A QWERTY Keyboard for Your Wrist." April 27

Patent

11/2016 US Patent number 9,495,134. "Methods and Apparatus for Code Segment Handling" Brandt, J. & **Oney, S.**