

Michael Brooks

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Education

Ph.D. in Human Centered Design and Engineering University of Washington Dissertation: <i>Human Centered Tools for Analyzing Online Social Data</i>	2010-2015
M.S. in Human Centered Design & Engineering University of Washington Concentration in User-Centered Design	2013
B.A. with High Honors, Computer Science, Mathematics Oberlin College Thesis: <i>Developing Visualization Software for Musicians</i>	2010

Awards and Honors

HCDE Graduate Academic Excellence Award	2015
Shobe Prize for <i>dub</i> Entrepreneurs	2013
Oberlin College NSF S-STEM Scholarship for Computational Modeling	2009
National Merit Scholar	2006

Conference Papers

- Brooks, M.**, Amershi, S., Lee, B., Drucker, S., Kapoor, A., Simard, P. FeatureInsight: Visual Support for Error-Driven Feature Ideation in Text Classification. Proc. VAST 2015. [\[PDF\]](#)
- Brooks, M.**, Basu, S., Jacobs, C., Vanderwende, L. Divide and Correct: Using Clusters to Grade Short Answers at Scale. Proc. Learning at Scale 2014. [\[PDF\]](#), [Video](#), [Data](#)
- Brooks, M.**, Robinson, J. J., Torkildson, M. K., Hong, S., Aragon, C. R. Collaborative Visual Analysis of Sentiment in Twitter Events. Proc. Collaborative Visualization, Design, and Engineering (CDVE) 2014. [\[PDF\]](#), [Demo](#), [GitHub](#)
- Brooks, M.**, West, J. D., Aragon, C. R., Bergstrom, C. T. Hoptrees: Branching History Navigation for Hierarchies. Proc. INTERACT 2013. [\[PDF\]](#), [Demo](#), [GitHub](#)
- Brooks, M.**, Aragon, C. R., Komogortsev, O. V. Perceptions of Interfaces for Eye Movement Biometrics. Proc. International Conference on Biometrics (ICB) 2013. [\[PDF\]](#)
- Brooks, M.**, Kuksenok, K., Torkildson, M. K., Perry, D., Robinson, J. J., Scott, T. J., Anicello, O., Zukowski, A., Harris, P., Aragon, C. R. Statistical Affect Detection in Collaborative Chat. Proc. CSCW 2013. [\[PDF\]](#) [GitHub](#)

Kuksenok, K., **Brooks, M.**, Wang, Q., Lee, C. P. Challenges and Opportunities for Technology in Foreign Language Classrooms. Proc. *CHI 2013* - best paper honorable mention. [\[PDF\]](#)

Kuksenok, K., **Brooks, M.**, Mankoff, J. Accessible Online Content Creation By End Users. Proc. *CHI 2013*. [\[PDF\]](#)

Scott, T. J., Kuksenok, K., Perry, D., **Brooks, M.**, Anicello, O., Aragon, C. R. Adapting Grounded Theory to Construct a Taxonomy of Affect in Collaborative Online Chat. Proc. *SIGDOC 2012*. [\[PDF\]](#)

Workshop Papers and Posters

Kuksenok, K., **Brooks, M.**, Robinson, J. J., Perry, D., Torkildson, M. K., Aragon, C. R. Automating Large-Scale Annotation for Analysis of Social Media Content. Poster at the *Interactive Visual Text Analytics Workshop, VisWeek 2012*.

Brooks, M., Aragon, C. R., & Komogortsev, O. V. Poster: User Centered Design and Evaluation of an Eye Movement-based Biometric Authentication System. Poster at *SOUPS 2011*.

Research Experience

Human Centered Tools for Analyzing Online Social Data 2012-Present

HCDE, University of Washington, with Cecilia Aragon
Human-centered design of tools for researchers working with text-based social data (e.g. Twitter, chat). Conducted formative ethnographic research on work practices. Led multiple research groups through design, development, and evaluation of machine learning and visual analytics tools.

Supporting Feature Creation for Text Classification 2014

Microsoft Research, with Saleema Amershi
Designed and evaluated tool to help ML practitioners think of ideas for new features in text classification problems. Experiment tested two strategies: visual summaries and sets of errors.

Interactively Grading Clustered Short Answers 2013

Microsoft Research, with Sumit Basu
Enable MOOC teachers to manually grade thousands of short answers efficiently, while giving feedback and reflecting on student learning. Designed, built, and evaluated web-based prototype in online experiment.

Usable Biometric Security 2011-2013

HCDE, University of Washington, with Cecilia Aragon
Led user-centered design, development, and evaluation of a new biometric authentication technique based on eye movement data.

Real-Time Music Visualization Tools 2009-2010

Computer Science, Oberlin College, with Richard Salter
Designed and evaluated prototypes of real-time visualization software as a practice tool for musicians. Conducted interviews with musicians to assess the prototypes.

Industry Experience

- User Experience Research Intern** 2012
Google, with Zhiwei Guan
Diary study about use of apps for finding information on mobile devices. Conducted usability studies in cooperation with product teams.
- Software Development Intern** 2010
RE2 Inc.
Developed the API, system software, and demo software for DARPA's Autonomous Robotic Manipulation robot.

Teaching Experience

- D3 Visualization Workshop Instructor** 2014-2015
HCDE, University of Washington
Developed tutorial content and co-led workshops introducing HCDE 411 and 511 visualization classes to visualization with the D3 library. Iteratively improved content and deployed web-based tutorials. [[Online](#), [GitHub](#)]
- Teaching Assistant** 2007-2009
Computer Science, Oberlin College
Graded and ran labs for introductory CS. Developed curricular materials for a Game Design course.
- Instructor** 2009
Oberlin College
Taught for-credit Experimental College course to prepare students for programming competitions, including CS fundamentals, programming technique, and competition strategy.
- Tutor** 2008-2009
Computer Science and Mathematics, Oberlin College
Tutored students for Intro. Computer Science, Data Structures, Programming Abstractions, Theory of Computer Science, and Differential Equations.

Service

- Student Volunteer**, CHI 2011 Conference 2011
Research Presenter, University of Washington Engineering Discovery Days 2011
College Admissions Mentor, University of Washington Dream Project 2011
Data Science Mentor, Community Data Science Workshop (UW) 2014-2015

Skills

- Research.** Qualitative methods, experiments and quantitative analysis.
Human Centered Design. Iterative design, ethnographic research, participatory design, usability studies.
Data Science. Databases, machine learning, visualization, statistics.
Software Development. Python, JavaScript, PHP, C#, Java.
Web Development. Python & PHP web frameworks, JavaScript frameworks, D3, REST, CSS/HTML.