

CHINMAY KULKARNI

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My research asks the question: how do we create lifelong learning opportunities for millions of people? And how do we do so in ways that combine formal learning with intellectual development in new forms of work? So far, it has yielded systems for large-scale peer assessment and discussion that have been used by more than 100,000 students in over a hundred Massive Open Online Classrooms (MOOCs). In continuing work, my research group is investigating how new forms of work can be designed around learning.

- EMPLOYMENT** Carnegie Mellon University, Pittsburgh, PA 2015 - current
Assistant Professor, Human-computer Interaction Institute
School of Computer Science
- EDUCATION** Stanford University, Stanford, CA 2010 - 2015
Doctor of Philosophy, Computer Science
Advisors: Scott Klemmer and Michael Bernstein
- BITS Pilani, Pilani, India 2005 - 2009
Bachelor of Engineering, Computer Science
- FUNDING** **Awarded:**
Office of Naval Research
Provably Impartial Peer Assessment for Expert Hiring
Principal Investigator \$400,000
(Co-PI: Ariel Procaccia, CSD)
- Manufacturing Futures Initiative* at Carnegie Mellon
VirtualCellLab: Accelerating tacit knowledge in cell-culture manufacturing
Principal Investigator \$197,000
(Co-PI: Rebecca Taylor, CIT)
- Department of Education/IES*
PDConnect: A Scalable Community Approach to Improving Instruction in AP Chemistry Nationwide
coPrincipal Investigator \$1,800,000
(under sub-contract with Stony Brook University)
- PATENTS** **Identifying Topically-related Phrases In A Browsing Sequence**
US 8,655,648 B2
Framework that facilitates third party integration of applications into a search engine
US 20120166276 A1; pending
- CONSULTING** **Eloquent Labs (eloquent.ai)** Aug 2016-present
Advice on creating scalable systems for combining human and machine intelligence for open-domain customer tasks.

PeerStudio, Inc. (peerstudio.org)

May 2018-present

Founder and technical advisor. My hopefully-sustainable small business (not a startup) creates opportunities for peer learning for individuals and small businesses.

**AWARDS &
HONORS**

Arthur Samuel Thesis Award, 2015-2016
Siebel Scholar, 2014
Doctoral Consortium, UIST 2014
Google Influential Paper Award 2014
Facebook Graduate Fellowship Finalist, 2013
Best Paper Award: Eurovis 2013

**JOURNAL
ARTICLES**

Peer and Self Assessment in Massive Online Classes; Chinmay Kulkarni, Wei, K. P., Le H., Chia D., Papadopoulos K., Cheng J., Koller D, Scott Klemmer; in *TOCHI: ACM Transactions on Computer-Human Interaction, Vol 20, Issue 6 (2013)*

**PEER-
REVIEWED
CONFERENCE
PAPERS**

Julia Cambre, Scott Klemmer, Chinmay Kulkarni. 2018. Juxtapeer: Comparative Peer Review Yields Higher Quality Feedback and Promotes Deeper Reflection. *Proceedings of CHI (2018)*.

Anson Kahng, Yasmine Kotturi, Chinmay Kulkarni, David Kurokawa, Ariel D. Proccaccia. 2018. Ranking Wily People Who Rank Each Other. *Proceedings of AAAI (2018)*.

Rebecca M. Quintana, Christopher Brooks, Cinzia Smothers, Yuanru Tan, Zheng Yao, Chinmay Kulkarni. 2018 Mentor Academy: Engaging Global Learners in the Creation of Data Science Problems for MOOCs. *Proceedings of the International Conference of Learning Sciences, 2018*

Adam Stankiewicz, Chinmay Kulkarni. 2016. \$1 Conversational Turn Detector. *Proceedings of ACM Learning at Scale (2016), March, 2016*.

Chinmay Kulkarni, Michael Bernstein, Scott Klemmer. 2015. PeerStudio: Rapid peer feedback emphasizes iteration and improves performance. *Proceedings of ACM Learning at Scale (2015), March, 2015*.

Yasmine Kotturi, Michael Bernstein, Chinmay Kulkarni, Scott Klemmer. 2015. Structure and messaging techniques for online peer learning systems that increase stickiness. *Proceedings of ACM Learning at Scale (2015), March, 2015*.

Chinmay Kulkarni, Julia Cambre, Yasmine Kotturi, Michael Bernstein, Scott Klemmer. 2015. Talkabout: Making Distance Matter with Small Groups in Massive Classes. *Proceedings of CSCW: ACM Conference on Computer Supported Collaborative Work (2015), March, 2015*.

Chinmay Kulkarni, Socher, R., Michael Bernstein, Scott Klemmer. 2014. The identify-verify pattern: combining peer assessment with algorithmic scoring to scale short-answer grading. *Proceedings of ACM Learning at Scale (2014), March, 2014*.

Lin S., Fortuna J., Chinmay Kulkarni, Maureen Stone, Jeffrey Heer. 2013. Selecting Semantically-Resonant Colors for Data Visualization. *Proceedings of Eurographics Conference on Visualization (EuroVis) 2013. Best Paper Award*

Chinmay Kulkarni, Ed H. Chi. 2013. All the News that's Fit to Read: A Study

of Social Annotations for News Reading. *Proceedings of CHI: ACM Conference on Human Factors in Computing Systems (2013)*. **Google Influential Paper 2013**

Chinmay Kulkarni, Steven Dow, Scott Klemmer. 2012. Early and Repeated Exposure to Examples Improves Creative Work. *Proceedings of the 34th Meeting of the Cognitive Science Society (CogSci 2012)*.

N. Abadala, Chinmay Kulkarni, Joseph Joy, Naren Datha, Aditya Sankar, and Rebecca Walton. 2010. An Interactive Multimedia Framework for Digital Heritage Narratives. *Proceedings of the ACM Multimedia International Conference, 2010* (Short paper).

Sâsa Tomic, Cristian Perfumo, Chinmay Kulkarni, A Armejach, Osman A. Unsal, Adrian Cristal, Mateo Valero. 2009. EazyHTM- Eager-Lazy Hardware Transactional Memory. *IEEE/ACM International Symposium on Microarchitecture (MICRO) 2009*.

EXTENDED ABSTRACTS

Julia Cambre, Chinmay Kulkarni, Scott Klemmer. Escaping the Echo Chamber: Ideologically and Geographically Diverse Discussions about Politics *Proceedings of CHI: ACM Conference on Human Factors in Computing Systems. (2017) - Late Breaking Work*.

Yasmine Kotturi, Andrew Du, Scott Klemmer, Chinmay Kulkarni. How does reciprocity-driven peer review evolve over the long-term? *ACM Learning@Scale Work in Progress (2017)*.

Justin Cheng, Chinmay Kulkarni. 2013. Tools for Predicting Drop-off in Large Online Classes. Scott Klemmer., *Adjunct Proceedings of CHI: ACM Conference on Human Factors in Computing Systems (CHI 2013)*.

Chinmay Kulkarni, Scott Klemmer. 2011. Automatically adapting web pages to heterogeneous devices. *Adjunct Proceedings of CHI: ACM Conference on Human Factors in Computing Systems (2011)*.

Chinmay Kulkarni, Santosh Raju, and Raghavendra Udupa. 2010. Memento: unifying content and context to aid webpage re-visitation. *Adjunct proceedings of UIST: ACM symposium on User interface software and technology, 2010*.

Chinmay Kulkarni, Osman Unsal, Adrian Cristal, Eduard Ayguade, Mateo Valero. 2009. Turbocharging Boosted Transactions: Or How I Learnt to Stop Worrying and Love Longer Transactions. *Proceedings of the PPOPP: ACM symposium on Principles and Practice of Parallel Programming 2009*.

Because workshop papers are sometimes not reviewed with the same rigor as conference submissions, these were not included above. A full list is available at Google Scholar: <https://scholar.google.com/citations?user=ZDatV6MAAAAJ&hl=en>.

SELECTED INVITED TALKS

Duolingo Mar 2018
Designing Scalable Learning Experiences

MIT Sep 2017
A Case for a Connected Future of Work and Learning

University of Illinois at Urbana-Champaign Sep 2017

A Case for a Connected Future of Work and Learning

Northwestern University Sep 2017
A Case for a Connected Future of Work and Learning

LWMOOC conference Sep 2017
Invited panelist

Princeton University Oct 2016
Learning and Working at Global Scales

University of Pittsburgh Aug 2016
Online Learning Studios for Open-ended Domains

Harvard University Oct 2015
Structuring Peer Interactions for Massive Scale Learning

Discussion Affordances for Natural Collaborative Exchange Talk Series
Designing with Diversity: Global conversations to enrich massive education Sept 2015.

Coursera, Inc. *Fast feedback in a global classroom* Jun 2014

Google, Inc. *Using Google Hangouts for Small Discussions in Massive Online Classes* May 2014

Berkeley Institute of Design, UC Berkeley *Learning better, and Creating Better Learners in MOOCs* Apr 2014

Facebook, Inc. *Massively Social Online Education: Peers and Networks in Online Courses* Dec 2013

EDUCAUSE ELI Focus Seminar *Lessons From Peer Assessment In MOOCs* Nov 2013

TEACHING

Spring 2018: 05-530 Tools for Online Learning - 15 units.

Spring 2017: 05-671 Graduate HCI Project - 15 units: Overall teaching: 4.6/5; Overall course: 4.4/5.

Fall 2016: 05-899/05-499 Special Topics in HCI (Learning with Peers at Massive Scale) - 12 units: Overall teaching: 3.8/5; Overall course: 3.5/5.

Spring 2015: 05-899 Special Topics in HCI (Learning with Peers at Massive Scale) - 12 units: 4.6/5; Overall course: 4.6/5.

MENTORING

Graduate students

- Yasmine Kotturi
- Zheng Yao (co-advised with Bob Kraut)
- Julia Cambre

PhD Dissertation Committees

Fatima Al-Raisi (LTI; advised by Jaime Carbonell) Shayan Doroudi (CSD; advised

by Emma Brunskill)

Undergraduates

Rohan Varma, Sarah Moss (CMU), **Ashley Reese** (Now at Google), **Julie Fortuna** (Now at Apple). **Kanit (Ham) Wongsuphasawat** (Now a PhD student at the University of Washington.)

SERVICE

External

Demos chair, ACM Conference on Computer-Supported Cooperative Work & Social Computing, 2017

Program Committee, ACM Conference on Computer-Supported Cooperative Work & Social Computing, 2017

Program Committee, ACM Conference on Learning at Scale, 2016

Program Committee, ACM Conference on Learning at Scale, 2015

Reviewer @ CHI 2010-2016, TOCHI 2013-2015, CSCW¹ 2012-2015, UIST 2011, DIS 2011 and others

¹*Recognized for excellent reviewing.*

Student Volunteer: CSCW 2014, UIST 2012 (Chair), UIST 2011, IUI 2011

With Jeff Bigham and Walter Lasecki, taught a course *Crowdsourcing and Crowd Work* at CHI 2017. Attendees learned how to work with the crowd to enable research and practical applications; and how to bake learning opportunities into crowd work.

At CMU

HCI representative at the CMU IRB 2017-

HCI Faculty Awards Nomination Committee 2017-

BHCI re-design committee 2017

HCII PhD admissions committee 2015

METALS admissions committee 2015,2016

BHCI admissions committee 2015

Distributed Artifacts

PeerStudio for the Global Communication Center I am the lead creator of PeerStudio (www.peerstudio.org), a peer review system for fast, revision-oriented feedback. More than 10,000 students have used it. At CMU, this is the basis of the Global Communication Center's "Leave a Review, Take a Review" system: <https://www.cmu.edu/gcc/appointment/cover-letter.html>

Talkabout: Small-group discussions in massive classes I am the lead creator of Talkabout (<http://talkaboutlearning.in>), a small-group real time video discussion system for MOOCs. Over 20,000 students from 135 countries have used it to discuss topics as varied as organizational behavior, psychology, philanthropy, womens health rights, creativity, and designing effective experiments. After the 2016 Presidential Election, we offered it as a platform for public discourse.

PREVIOUS RESEARCH POSITIONS

GOOGLE, INC.

Research Intern

Mountain View, CA
Summer 2011

MICROSOFT RESEARCH INDIA

Research Developer

Bangalore, India

MICROSOFT RESEARCH

Oct 2009- Sep 2010

Research Intern

Redmond, WA

BARCELONA SUPERCOMPUTING CENTER

Summer 2009

Barcelona, Spain

Research Intern
Intern

Jan 2009 - May 2009
Summer 2008

**SELECTED
PRESS**

CNBC	Dec 13, 2016
Post-election therapy across Silicon Valley after Trump win.	
Seeker	Dec 14, 2016
'Mini U.N.' Online Platform Fights the Echo Chamber Effect	
EdSurge	Mar 4, 2016
Could Slack Be the Next Online Learning Platform?	
Stanford Report	May 6, 2015
Stanford Researchers Use Diverse, Global Discussion Groups to Boost Online Learning Experience for Participants	
Harvard Business Review	April 23, 2014
"The Right Colors Make Data Easier to Read"	
EdSurge	June 24, 2015
"5 Essential Steps to Building Community for your Online Course"	
Financial Times	December 9, 2013
"Moocs: Can Free Classes Match an MBA?"	