Joseph Chee Chang

PhD Candidate (ABD)
Language Technologies Institute
School of Computer Science
Carnegie Mellon University

I am graduating and currently looking for industry research opportunities.

I am interested in how people **explore and synthesize unfamiliar information** in complex decision-making scenarios such as exploratory search and data analysis. For this, I apply **machine learning and interaction techniques** to build and study **end-user and crowd-sourcing systems with novel interfaces**.

My research is supported by Google, Bosch, Yahoo, ONR and NSF.

Education

2013 - 2020 **PhD+MS, Computer Science - HCI focus** *Carnegie Mellon U*
CHI best paper honorable mentions **x3**. Advisor: Aniket Kittur

2010 - 2012 **MS, Computer Science - NLP focus** *NTHU (Taiwan)*
Thesis work presented in top-tier conf (ACL'12). Advisor: Roger Jang

2006 - 2010 **BS, Computer Science - EDA focus** *YZU (Taiwan)*
Won in a national 3D IC partitioning algorithm competition.

Experience

Summer 2016 **Microsoft PhD Research Intern** *Microsoft Research*
Focused on crowdsourcing and machine learning. Work presented at a top-tier conference. Mentors: Saleema Amershi and Ece Kamar

Summer '14,'15,'17 **REU Internship Program Research Mentor** *HCI Institute, CMU*
Mentored a total of 8 research interns over three Summers.

April-July 2013 **Full-time Search Engineer** *Yahoo!*
Knowledge Graph and search log analysis using Hadoop.

Fall 2012 **Teaching Assistant - Intro to NLP** *NTHU (Taiwan)*
Recitations and Lab sessions. 4+ hours of teaching/week.

2009-2011 **Research Assistant** *Academia Sinica*
EM-based algorithm on Hadoop for cross-lingual ontology mapping.

Grants (co-wrote with PI Aniket Kittur)

2020 **Office of Naval Research Grant**
Externalizing and Aggregating Structured Mental Representations

2017 **NSF AIR-TT Grant**
Supporting Complex Sensemaking on Mobile Phones

2016, 2018 2019 **Google Faculty Research Award**
Modeling and Augmenting Sensemaking and Exploratory Search
Supporting Complex Sensemaking on Mobile Phones

2015 **Yahoo! InMind Project**
From Search Results to Search Landscapes

Awards and Honors

2016 **AAAI HCOMP Invited Talk** *Encore Track*

2015 **Fellowship of the InMind Projects at CMU** *Yahoo!*

2015 **Government Scholarship for Studying Abroad** *Taiwan*

2011 **First Place, Fun Taipei App Competition** *Taipei City Gov.*
1/170 teams. Developed a city tour guide app for iOS and Android.

2010 **Third Award, National IC/CAD Contest** *Dept. of Education, Taiwan*
10% in 160 teams. Developed a 3D-IC partitioning algorithm (3000 lines of C++) to compete on speed and circuit optimization.

2010 **Second Place, Trend Micro Programming Contest** *Trend Micro*
2/67 teams. Mobile application development competition.

2009 **Conference for Open Source Coders, Users and Promoters***(COSCUP)*
Presented an Android benchmarking project at the largest OSS conference in Asia.

Contact

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Selected Peer-Reviewed Papers

Joseph Chee Chang, Julina Coupland, Bradley Breneisen, Nathan Hahn, and Aniket Kittur. 2020. Mesh: Scaffolding Comparison Tables for Online Decision Making. In *Proceedings of the 33rd Annual Symposium on User Interface Software and Technology (ACM UIST, conditionally accepted)*. Association for Computing Machinery, 14 pages. https://doi.org/10.1145/2984511.2984538

Joseph Chee Chang, Nathan Hahn, Adam Perer, and Aniket Kittur. 2019. SearchLens: Composing and Capturing Complex User Interests for Exploratory Search. In *Proceedings of the 24th International Conference on Intelligent User Interfaces (ACM IUI. 25%)*. Association for Computing Machinery, 12 pages. https://doi.org/10.1145/3301275.3302321

Joel Chan, Joseph Chee Chang, Tom Hope, Dafna Shahaf, and Aniket Kittur. 2018. SOLVENT: A Mixed Initiative System for Finding Analogies between Research Papers. *Proceedings of the ACM Human-Computer Interaction* CSCW, Article 31 (Nov. 2018), 21 pages. DOI:http://dx.doi.org/10.1145/3274300

Nathan Hahn, Joseph Chee Chang, and Aniket Kittur. 2018. Bento Browser: Complex Mobile Search Without Tabs. In *Proceedings of the CHI Conference on Human Factors in Computing Systems (ACM CHI. 25%)*. Association for Computing Machinery, 12 pages. https://doi.org/10.1145/3173574.3173825

Ting-Hao Huang, Joseph Chee Chang, and Jeffrey P. Bigham. 2018. Evorus: A Crowd-Powered Conversational Assistant Built to Automate Itself Over Time. In *Proceedings of the CHI Conference on Human Factors in Computing Systems (ACM CHI. 25% **Best Paper Honorable Mention Award** 🏆)*. Association for Computing Machinery, 13 pages. https://doi.org/10.1145/3173574.3173869

Joseph Chee Chang, Saleema Amershi, and Ece Kamar. 2017. Revolt: Collaborative Crowdsourcing for Labeling Machine Learning Datasets. In *Proceedings of the CHI Conference on Human Factors in Computing Systems (ACM CHI. 25%)*. Association for Computing Machinery, 13 pages. https://doi.org/10.1145/3025453.3026044

Joseph Chee Chang, Aniket Kittur, and Nathan Hahn. 2016. Alloy: Clustering with Crowds and Computation. In *Proceedings of the CHI Conference on Human Factors in Computing Systems (ACM CHI. 23%, **Best Paper Honorable Mention Award** 🏆)*. Association for Computing Machinery, 12 pages. https://doi.org/10.1145/2858036.2858411

Nathan Hahn, Joseph Chang, Ji Eun Kim, and Aniket Kittur. 2016. The Knowledge Accelerator: Big Picture Thinking in Small Pieces. In *Proceedings of the CHI Conference on Human Factors in Computing Systems (ACM CHI. 23%, **Best Paper Honorable Mention Award** 🏆)*. Association for Computing Machinery, 13 pages. https://doi.org/10.1145/2858036.2858364

Joseph Chee Chang, Nathan Hahn, and Aniket Kittur. 2016. Supporting Mobile Sensemaking Through Intentionally Uncertain Highlighting. In *Proceedings of the 29th Annual Symposium on User Interface Software and Technology (ACM UIST. 20.6%)*. Association for Computing Machinery, 8 pages. https://doi.org/10.1145/2984511.2984538

Joseph Chang, Jason S. Chang, and Roger Jyh-Shing Jang. 2012. Learning to Find Translations and Transliterations on the Web. In *Proceedings of the 50th Annual Meeting of the Association for Computational Linguistic (ACL. 20%)*. https://www.aclweb.org/anthology/P12-2026