

University of Michigan School of Information • Ann Arbor, MI

Sep 2012 – Present

ExpertIdeas: Incentivizing Domain Experts to Contribute to Wikipedia

Collaborators: Yan Chen, Rosta Farzan, Robert Kraut, Ark Fangzhou Zhang

Mar 2014 – Present

By conducting randomized field experiments, using a 3×2 factorial design, we investigate the incentives that might motivate scholars to contribute to Wikipedia. We explore the impact of social amplifier on the private benefit from contributing to the public good. When an expert edits a Wikipedia article relevant to her research, the private benefit is multiplied by the number of people who view that article. To measure the effect of the social amplifier, we introduce exogenous variations on the number of times the recommended Wikipedia articles have been viewed over the past month. For this purpose, we deliver different versions of an email message inviting researchers world-wide to contribute to Wikipedia.

- Developed an administrative web application in Django on AWS, which provides subjects' local time estimation, email tracking, dynamic reporting, data visualization, and implemented a Wikipedia Bot to post comments on article Talk pages.
- Developed crawlers to retrieve data from Google Scholar, Wikipedia, and RePEc.
- Conducted usability testing and interviewed researchers, and redesigned the study website accordingly.
- Doing data analysis, and authoring my pre-candidacy proposal about the field experiment.

Impacts of Wikiprojects Membership on Individuals' Contribution to Wikipedia

Collaborators: Yan Chen, Ark Fangzhou Zhang

Oct 2015 – Present

In order to evaluate this impact, we collected the complete editing history of 9,000 registered top editors and the number of characters in each entry. The causal relationship is inferred by the method of matching, which compares the editing behavior of treated editors, members of at least one WikiProject, with non-members who have similar characteristics, such as lifetime at Wikipedia and editing activeness before the focal week. We invoke the assumption of selection on observables by the fact that a typical user's exposure to a WikiProject depends on the duration of membership and the amount of contribution to articles under the Wikiproject. Because editors' selection into WikiProject is susceptible to transitory shock, we use difference-in-difference estimator to single out the temporally invariant differences between treated and untreated editors.

A Panel Study of User Vulnerability to Phishing Attacks

Collaborators: Yan Chen, Ark Fangzhou Zhang

Nov 2015 – Jan 2017

Using panel data from survey and incentivized economic experiments over multiple years, we built an econometric model to predict user vulnerability to phishing attacks. Multi-year repeated measurements over a diverse and yet stable sample enabled us to evaluate the effectiveness of IT security education programs and to investigate human learning and retention in the IT security domain. For this purpose, we developed Holt-Laury's Lottery and Eckel-Grossman's Gamble to measure subjects' risk preferences, Berg-Dickhaut-McCabe's Trust game, and an innovative game to measure curiosity. Most of these games have long instructions and one of my objectives was to make them easy to understand through a user-centric design.

Dynamic Contest Design for Crowdsourcing

Collaborators: Yan Chen, Mohamed Mostagir

Nov 2015 – Present

Our study will empirically explore how human behavior changes with varying incentive structures in the form of contests for leaderboard recognition. Using lab experiments, we will distribute a classification task (the Knapsack game) to a group of subjects, controlling for the type of tournament each subject participates in. The contests will vary with regard to the exact payment scheme used and the number of leaderboard slots allocated to participants. We will then capture a measure of effort each person has exerted in order to find the correlation between effort expenditure and contest.

BALANCE: Enhancing Diversity in News & Opinion Aggregators

Collaborator: Paul Resnick

Nov 2012 – Feb 2013

Analyzed Name Entity Recognizers & Wikifiers to extract entities to find different aspects in news articles.

Iran University of Science and Technology • Tehran, IR

Jul 2009 – Feb 2011

Dissertation: A New Approach for Density-Based Clustering

May 2011

Designed & implemented to measure density levels, visualize them & predicts the clusters.

Other Research Projects:

Jun 2009 – Jul 2011

- **KDD CUP 2011** - Ranking: 55 / 1878 rivals. (RMSE: 24.03% / best RMSE: 21.01%) Designed & implemented novel User-based & Item-based Collaborative Filtering algorithms, & applied a Cascade Feed-forward Neural Network to merge the results.
- Analyzed **chatbots**: Alice & Jabberwacky, yielded a Persian bot using CBR (Case-based Reasoning) & AIML.

University of Science and Culture • Tehran, IR

Jul 2007 - Feb 2010

Dissertation: A New Approach for Skeletonization of Handwritten Images

Designed, implemented & compared other methods, showing novel time & accuracy results.