Abstract:
User-generated content (UGC) now constitutes a large fraction of the relevant, easily accessible content that makes the Web useful. Review-aggregating sites such as Yelp are widely used by potential consumers, and the reviews written by Amazon users are a very valuable component of the service that Amazon provides. Social computing systems such as Wikipedia and online Q&A forums- Yahoo! Answers, Quora, StackOverflow- owe almost all their utility to user contributions. But while there is a large amount of UGC online, not all of it is of the same quality. What can we understand, using an economic approach, about what incentive schemes should be employed by such systems to elicit high quality contributions?

We first provide a game-theoretic model within which the design and performance of mechanisms for incentivizing high quality UGC can be analyzed. Our model consists of strategic contributors motivated by exposure, and has the feature that the quality as well as the number of contributions are endogenously determined in a free-entry Nash equilibrium— it is crucial in UGC to not just incentivize high quality, but also to encourage the production of content. An ideal mechanism in this context should be easily implementable in practice, and elicit both high quality and high participation in equilibrium, with near-optimal quality as the available attention diverges (corresponding to large viewership). We first demonstrate that a very simple elimination mechanism can achieve quality that tends to optimal, along with diverging participation, as the number of viewers diverges. Next we analyze equilibria in the widely used rank-order mechanism, where contributions are allocated positions on the page in decreasing order of their ratings, and show that the rank-order mechanism also elicits high quality contributions—the lowest quality that can arise in a mixed strategy equilibrium of the rank-order mechanism becomes optimal as the amount of available attention diverges. Finally, we compare the rank-order mechanism against the more equitable proportional mechanism, which distributes attention in proportion to the number of positive ratings—here we show that the rank-order mechanism, while less ‘fair’, almost always incentivizes higher quality contributions in equilibrium than the proportional mechanism.

Based on joint work with Preston McAfee (WWW 2011) and Patrick Hummel (EC 2011).

Biography:
Arpita Ghosh is a Senior Research Scientist at Yahoo! Research in the Microeconomics and Social Systems Group. Her research focuses on algorithms and mechanism design in the context of the Web, particularly social computing and user-generated content, online advertising, matching markets, and privacy. She holds a PhD from Stanford University.