Social Computing--The New Paradigm for Computing

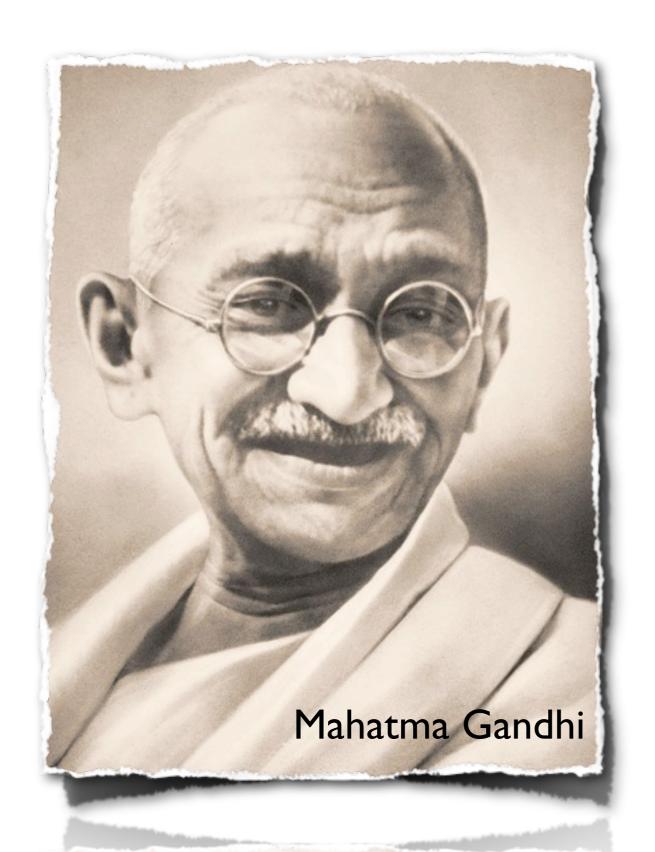
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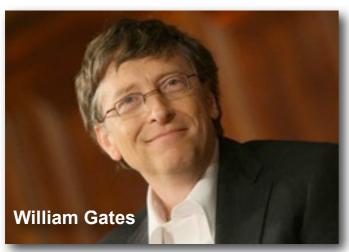


Interdependence is and ought to be as much the ideal of man as self-sufficiency.

Man is a social being.



The Billionaire Shuffle











2008

at 23 and \$1.5 billion later...

Social Computing-The New Paradigm for Computing



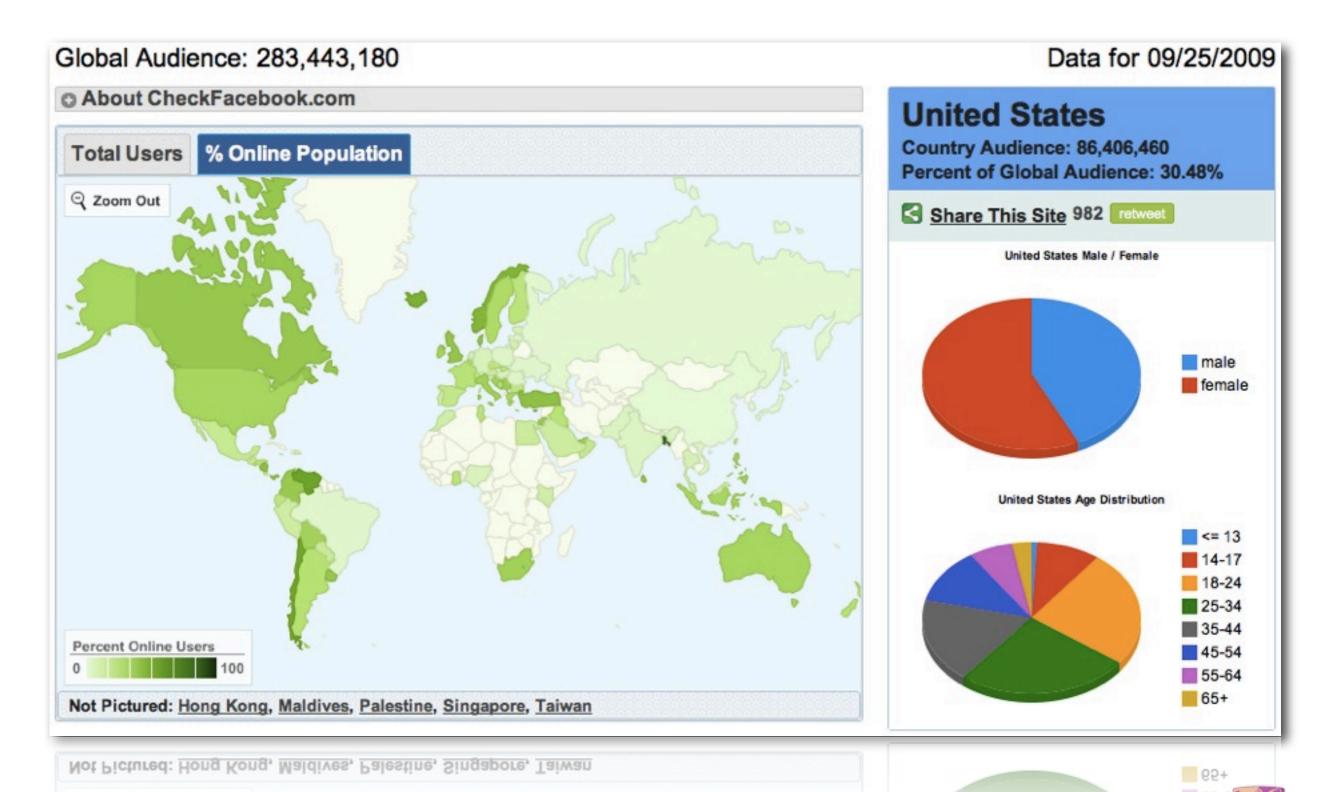


2008



Irwin King, Joint Research Center for Media Sciences, Technologies and Systems, Shenzhen, China, November 27, 2009

Facebook's Global Audience



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Facebook's Growth Table

General Growth

More than 300 million active users

50% of our active users log on to Facebook in any given day

The fastest growing demographic is those 35 years old and older

| 10 Largest Countries | | | | 10 Fastest Growing Over Past Week | | | | |
|----------------------|----------------|------------|-----|-----------------------------------|----------|---------|--|--|
| 1. | United States | 86,406,460 | 1. | China | 100.58 % | 6,920 | | |
| 2. | United Kingdom | 20,214,180 | 2. | Taiwan | 11.14 % | 322,900 | | |
| 3. | Turkey | 13,104,960 | 3. | Vietnam | 8.91 % | 74,460 | | |
| 4. | Canada | 12,862,140 | 4. | Philippines | 6.77 % | 360,360 | | |
| 5. | France | 12,245,140 | 5. | Iraq | 6.05 % | 4,800 | | |
| 6. | Italy | 11,573,640 | 6. | Romania | 5.17 % | 15,300 | | |
| 7. | Indonesia | 9,642,620 | 7. | Sweden | 5.11 % | 127,760 | | |
| 8. | Australia | 6,572,900 | 8. | Ireland | 5.1 % | 47,220 | | |
| 9. | Spain | 6,554,500 | 9. | Ukraine | 4.81 % | 7,780 | | |
| 10. | Argentina | 6,380,080 | 10. | Qatar | 4.49 % | 8,500 | | |

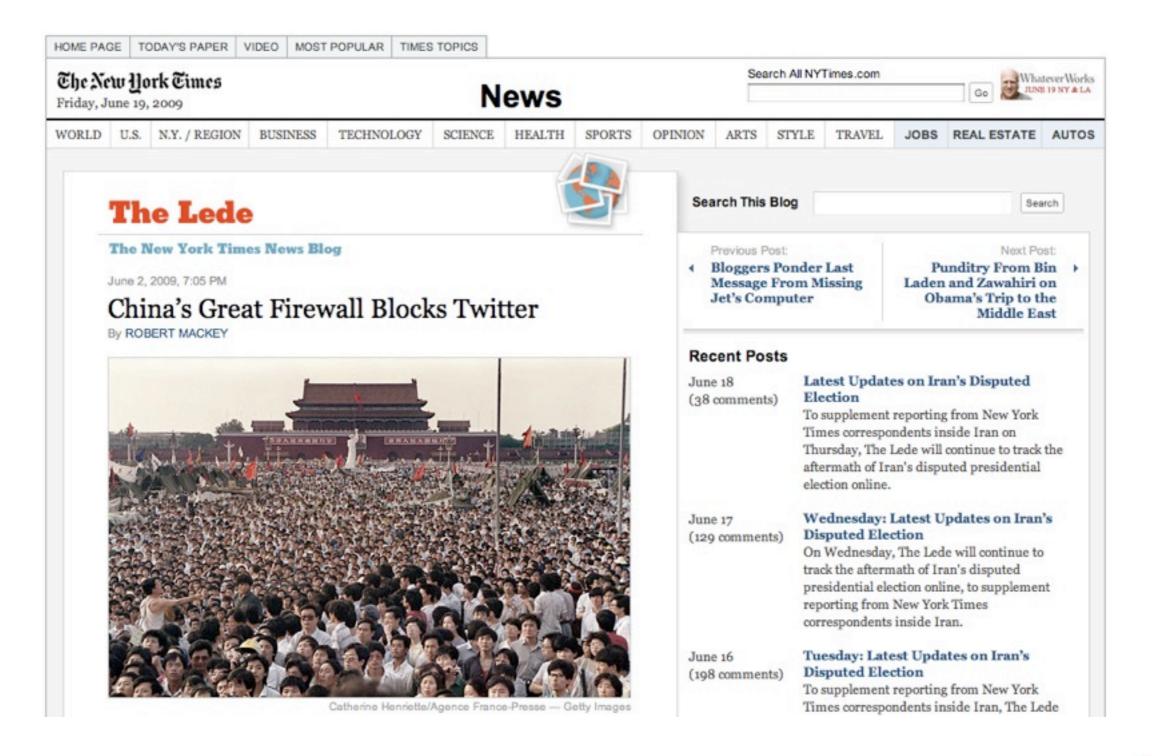
Global Internet Traffic

| Alexa as of May 2009 | China | USA | Japan | India | Brazil | Global |
|-------------------------|-----------|-----------------|-----------|-----------------|--------------------|-----------------|
| ı | Baidu | Google | Yahoo.jp | Google.in | Google | Google |
| 2 | QQ | Yahoo | FC2 | Google | Orkut.br | Yahoo |
| 3 | Sina | Facebook | Google.jp | Yahoo | Windows Live | YouTube |
| 4 | Google.cn | YouTube | YouTube | Orkut.in | Universo Online | Facebook |
| 5 | Taobao | Myspace | Rakuten | YouTube | YouTube | Windows Live |
| 6 | 163 | MSN | Livedoor | Blogger | Globo | MSN |
| 7 | Google | Windows Live | Ameblo.jp | Rediff | MSN | Wikipedia |
| 8 | Sohu | Wikipedia | mixi | Facebook | Google | Blogger |
| 9 | Youku | Craigslist | Wikipedia | Wikipedia | Yahoo | Baidu |
| 10 | Yahoo | EBay | Google | Windows Live | Terra | Myspace |

Social Networking

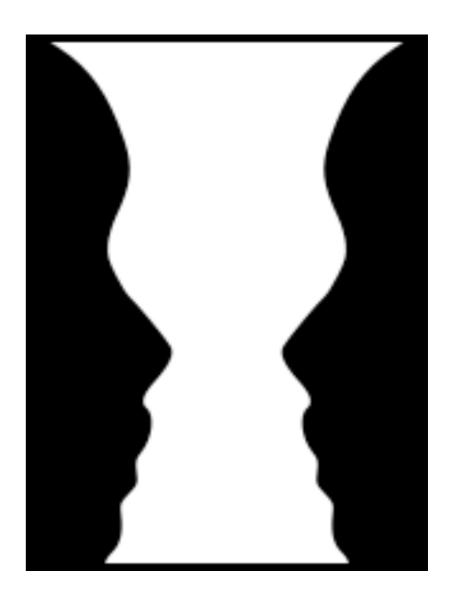
HOW TO USE WEB 2.0 IN THE ENTERPRISE

Twitter in Spotlight



Today's Road Map

- Web 2.0 and Social Computing
- Social Media and Platforms
- Human Computation
- Social Computing and Education
- Some Final Thoughts...



Web 2.0

- Web as a medium vs. Web as a platform
- Read-Only Web vs. Read-and-Write Web
- Static vs. **Dynamic**
- Restrictive vs. **Freedom & Empowerment**
- Technology-centric vs. User-centric
- Limited vs. Rich User Experience
- Individualistic vs. **Group/Collective Behavior**
- Consumer vs. **Producer**
- Ownership vs. Experiences
- Transactional vs. **Relational**
- Top-down vs. **Bottom-up**
- Institutions vs. **Communities**
- People-to-Machine vs. People-to-People
- Search & browse vs. Publish & Subscribe
- Closed application vs. Service-oriented Services
- Functionality vs. **Utility**
- Data vs. Value
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Web 2.0 vs. Social Computing

Web 2.0 is about specific technologies (blogs, podcasts, wikis, etc) that are relatively easy to adopt and master. Social Computing is about the new relationships and power structures that will result. Think of it another way: Web 2.0 is the building of the Interstate Highway System in the 1950s; Social Computing is everything that resulted next (for better or worse): suburban sprawl, energy dependency, efficient commerce, Americans' lust for cheap and easy travel.

Forrester Research, 2006



Innovation is moving from a top-down to bottom-up model Value is shifting from ownership to experiences

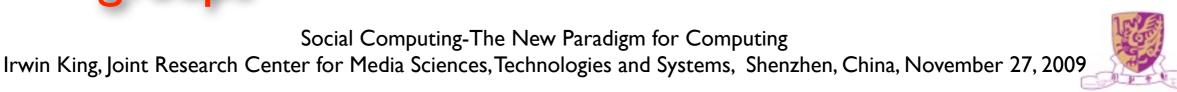
Power is moving from institutions to communities

Forms of Social Computing

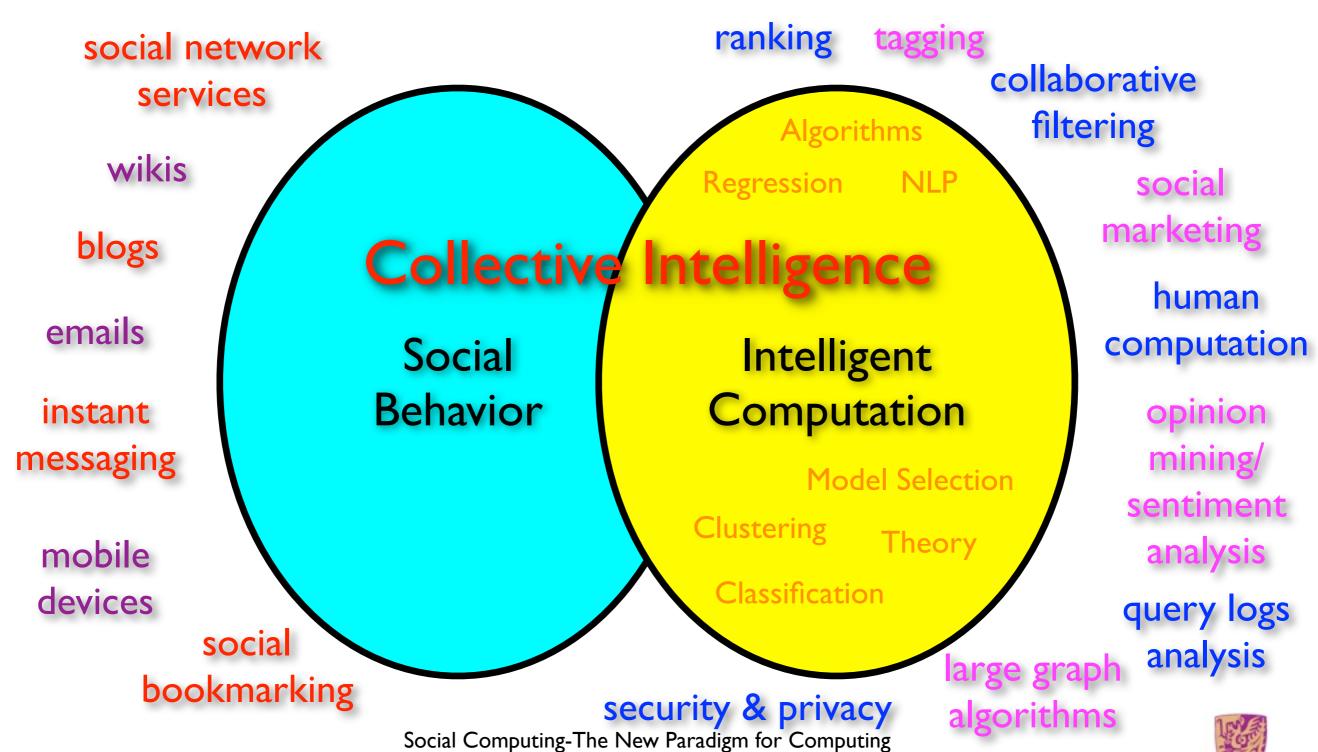
Examples Social technology Current usage 6% of North American online Social networks Linked in orkut facebook consumers use social networking Technology that allows users to myspace myspace a place for friends Ofriendster. sites weekly, up from 4% in 2004. leverage personal connections. Bloglines 🚮 6% of North American online RSS FeedBurner consumers use RSS weekly. An XML standard that lets users MYAHOO! collect and read content feeds. 47% of marketers use or plan to 2 Pluck newsgator use RSS feeds. 56% of US firms use open source Open source software The Apache Software Foundation software; 19% plan to use it. Publicly available software that can be copied or modified Linux 39% of European firms use open without payment. source software; 29% plan to. OpenOffice.org 10% of North American online Blogs Blogger Online diaries of text, photos, consumers visit blogs weekly. **TypePad** or other media. 51% of marketers use or plan to WEBLOGS.COM msn use blogs in some way. 79% of US online consumers use Search engines Services that find Web content a search engine weekly in 2005. based on user-specified criteria. 79% of marketers use or plan to use search marketing. **User review portals** 12% of North American and 21% @ tripadvisor ••• reviewcentre of European online consumers Web portals that allow users to visit ratings sites. search for peer reviews on a CNET.com product or service.

Social Relations, Signals, and Information

presence identity crew binary social role teams populations cardinal squad reputation organizations expertise integer trust cohorts markets ownership real communities accountability artners knowledge



Social Computing



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Social Computing Revolution

- Glocalization-think globally and act locally!
- Weblication-Web is the application!
- 3 Cs
 - Connectivity
 - Collaboration
 - Communities



Social Networking Sites

 Example of Social Networking Sites: FaceBook, MySpace, Blogger, QQ, etc.

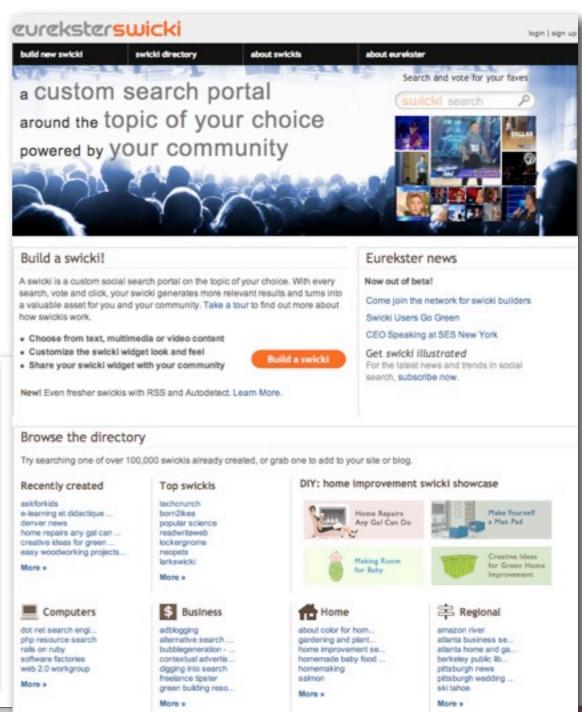


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Social Search

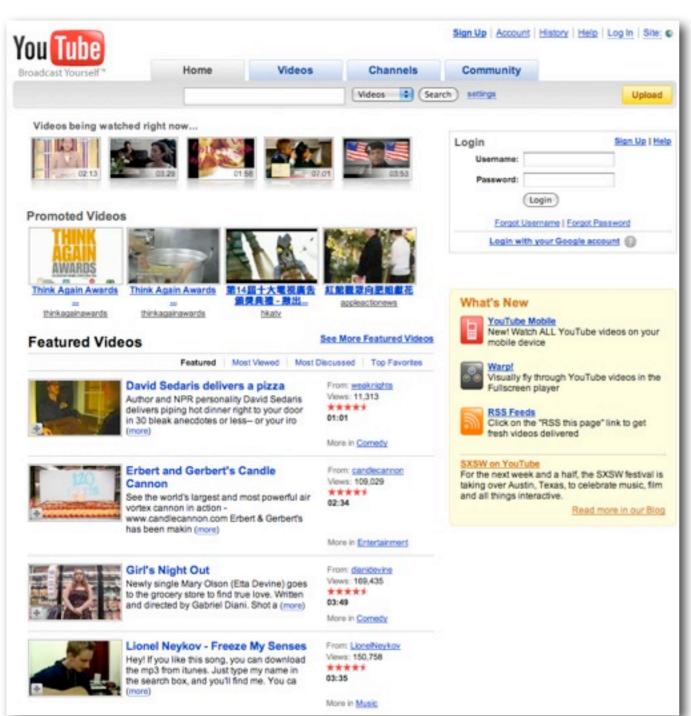
- Social Search Engine
- Leveraging your social networks for searching





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Social Media

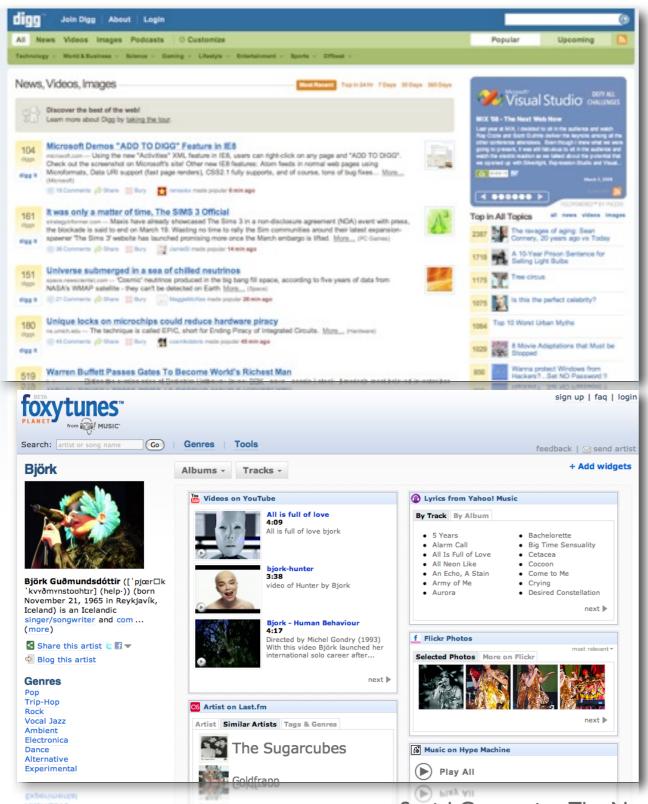




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Social News/Mash Up



The Sugarcubes

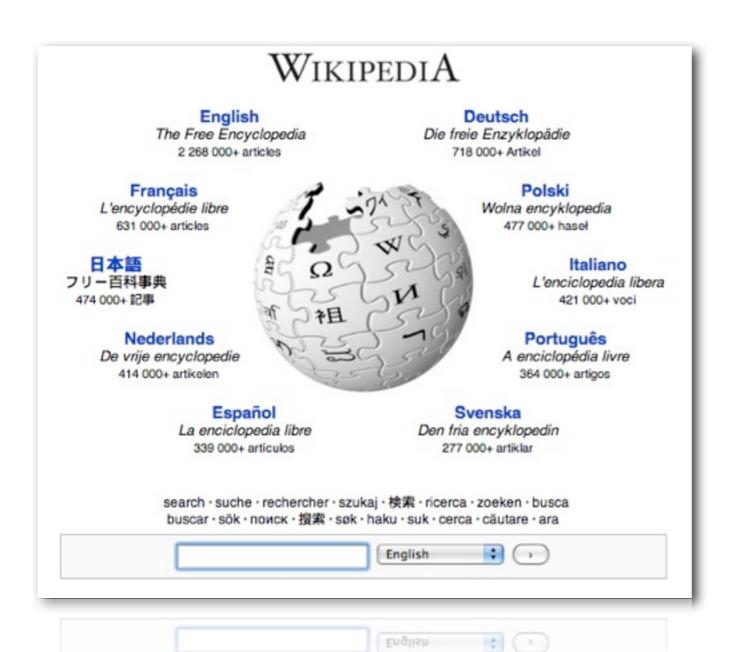


Vocal Jazz Ambient Electronica Dance Alternative Experimenta

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Social Knowledge Sharing

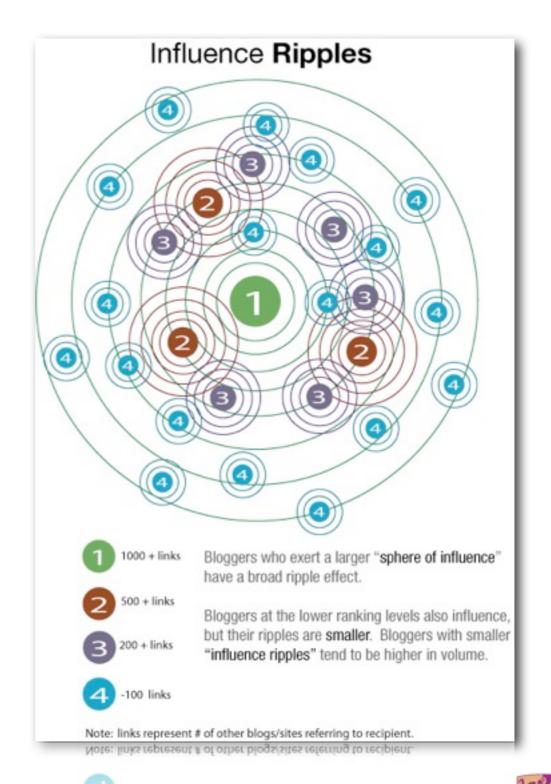




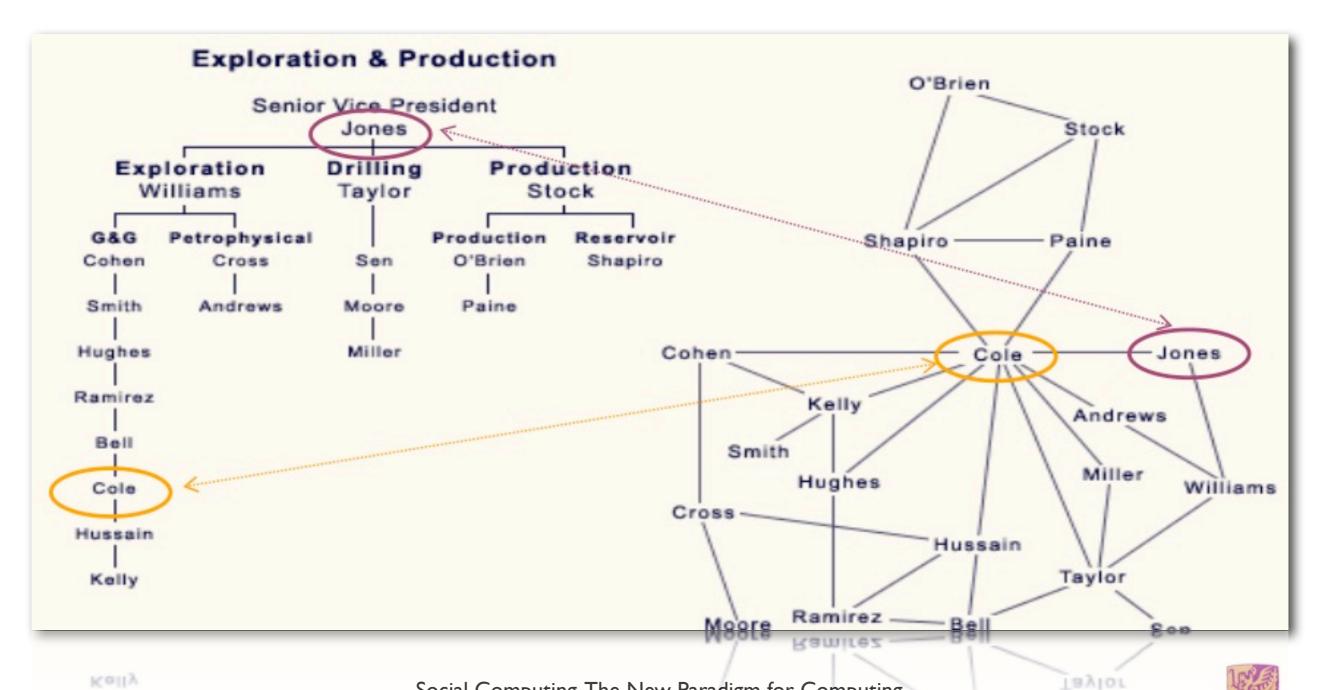


Social Marketing

- Viral marketing
- Who are the brokers?
- Who can exert the most influence on buying/selling?
- How much should one advertise?



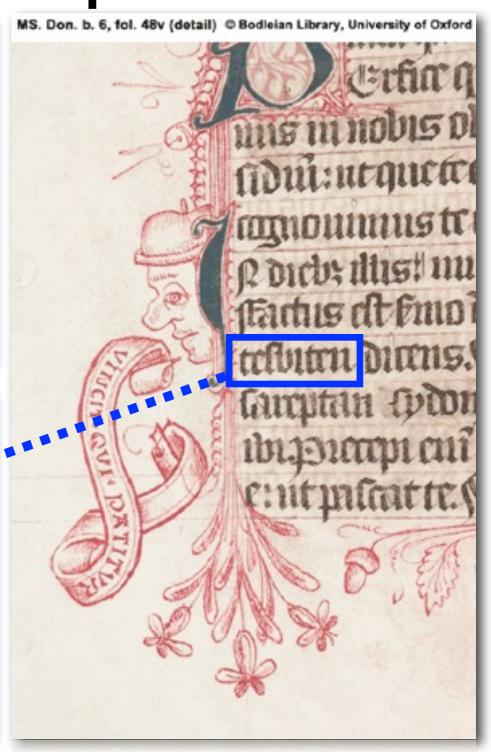
Social Management



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Social/Human Computation



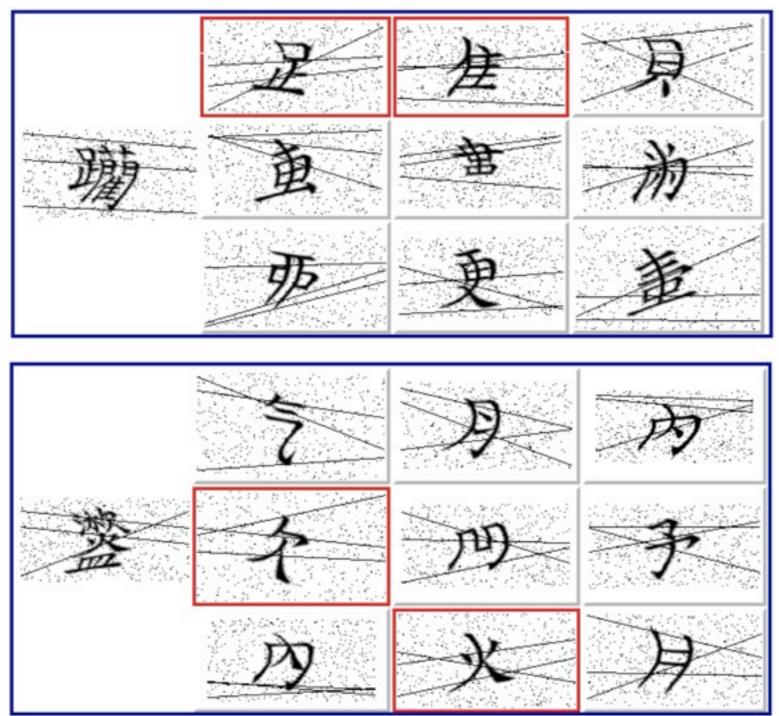


Problems signing up? Check out our help pages

Sign Up

Chinese CAPTCHA

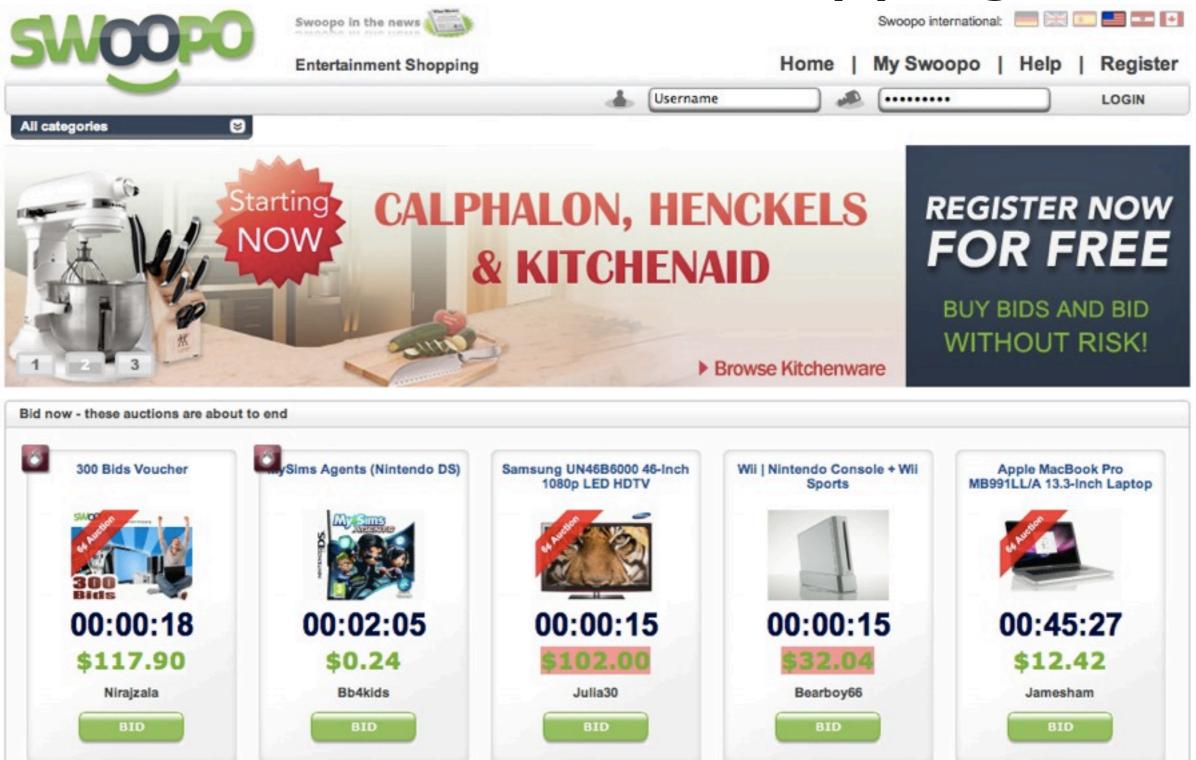
Ling-Jyh Chen, Institute of Information Science, Academia Sinica, Taipei, Taiwan



Human Computation



Entertainment Shopping



Games With A Purpose



Matchin

- Image search by aesthetic value
- Babble
 - Translate foreign language into English
- InTune
 - Tags songs with description text
- Squigl
 - Image segmentation
- Verbosity
 - Database of common knowledge description



Crowdsourcing

Sheng-Wei (Kuan-Ta) Chen, Institute of Information Science, Academia Sinica, Taipei, Taiwan

- Crowdsourcing = Crowd + Outsourcing
- Soliciting solutions via open calls to large-scale communities
 - INNOCENTIVE



oDesk



- Wikipedia
- Yahoo! Answers, Baidu 知道
- Amazon Mechanical Turk Marketplace for work

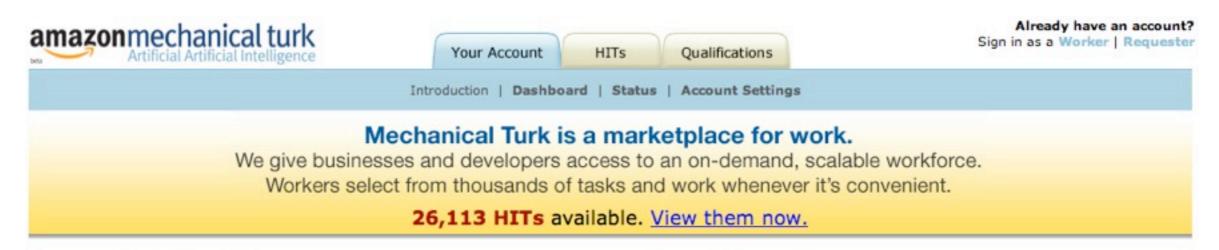


Yahoo! Answers & Baidu知道



Asked by hmmmm - 1 year ago - Trivia - 1 Answer - Resolved Questions

Amazon Mechanical Turk





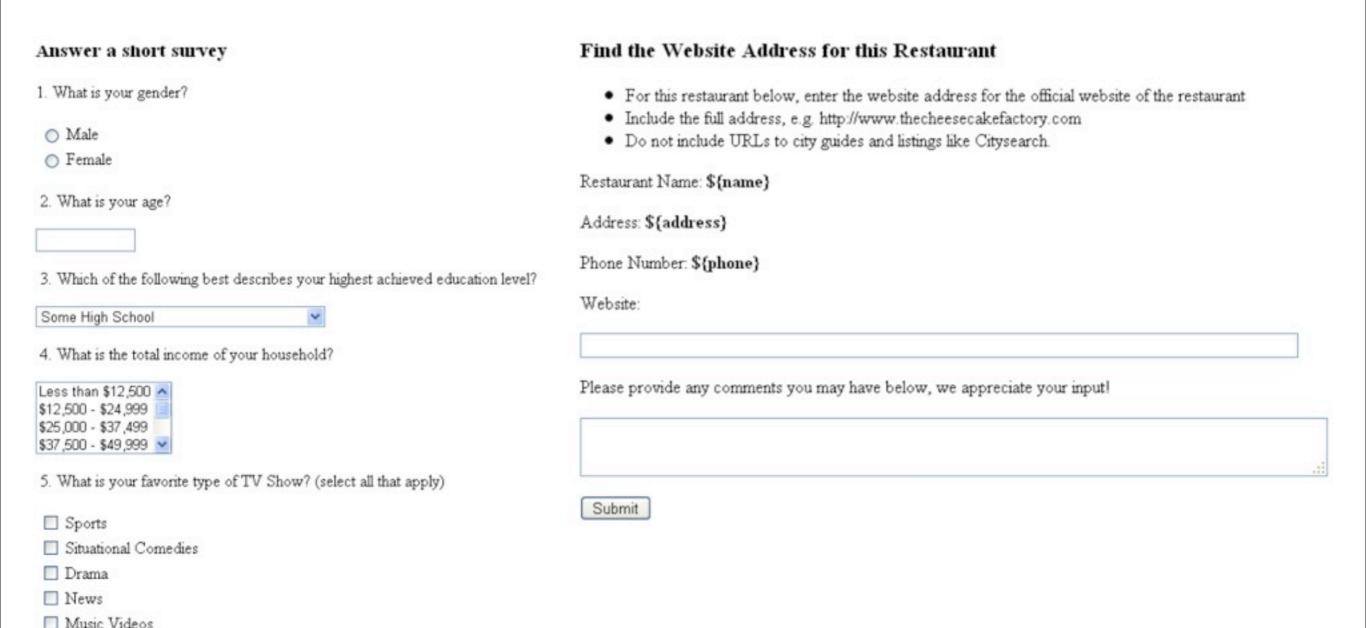
Get Results from Mechanical Turk Workers Ask workers to complete HITs - Human Intelligence Tasks - and get results using Mechanical Turk. Requister Now As a Mechanical Turk Requester you: Have access to a global, on-demand, 24 x 7 workforce Get thousands of HITs completed in minutes Pay only when you're satisfied with the results Fund your account tasks Get results Get Started

or learn more about being a Requester

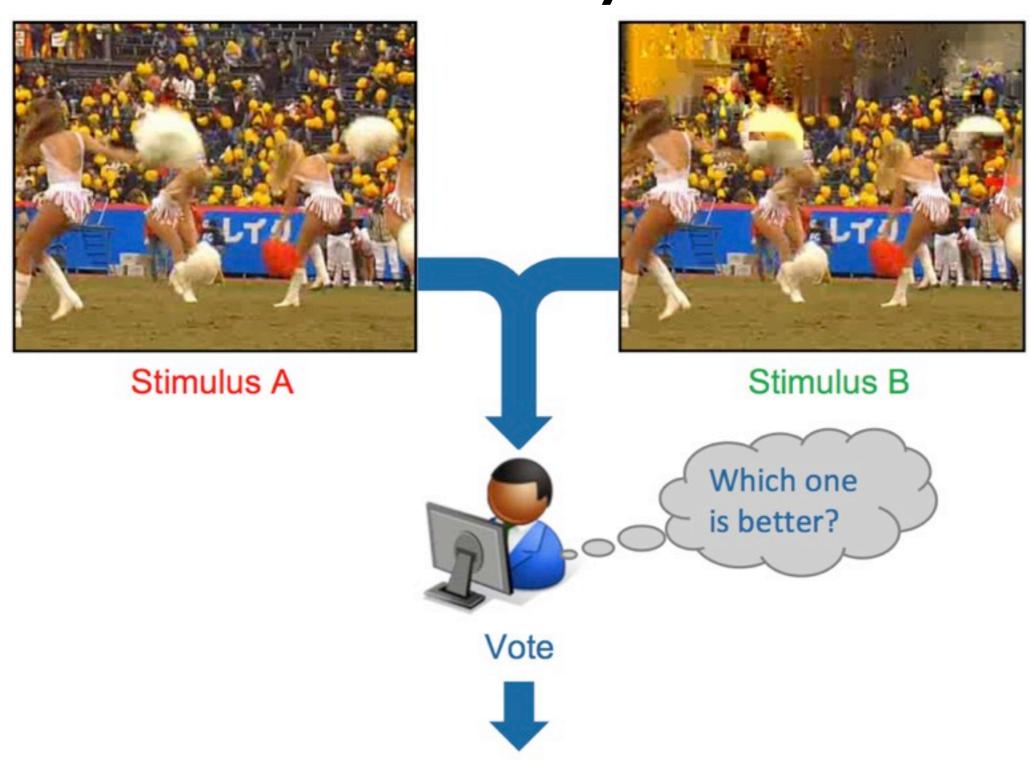
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Example of Mechanical Turk



Multimedia Quality Assessment



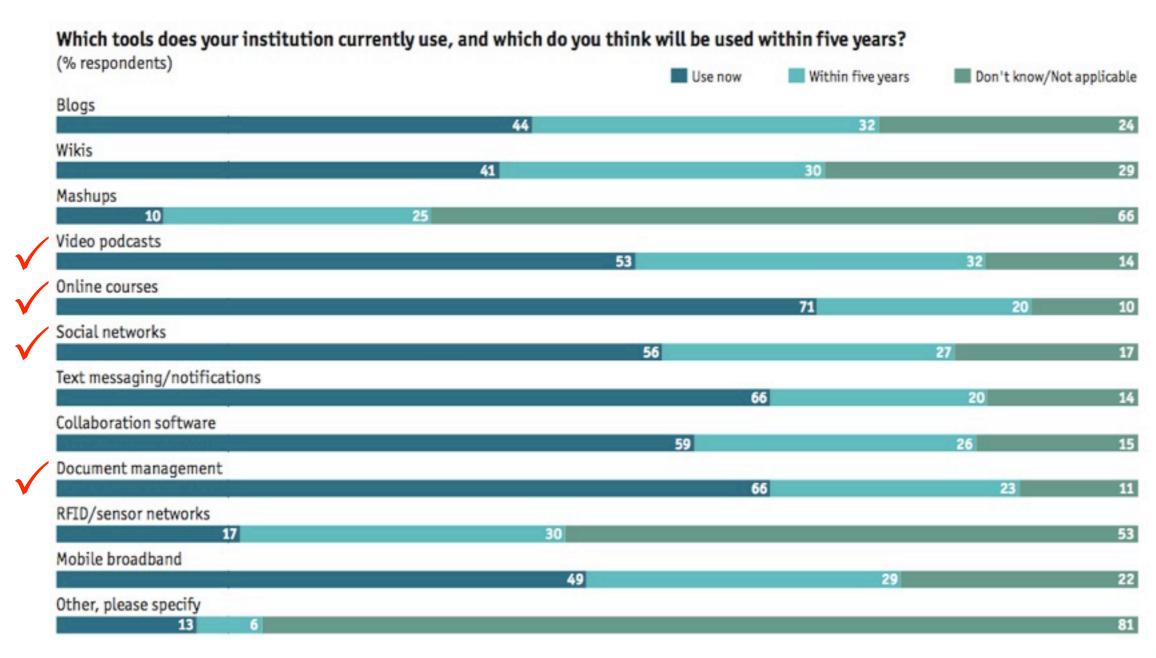
Stimulus A
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Topics in Social Computing

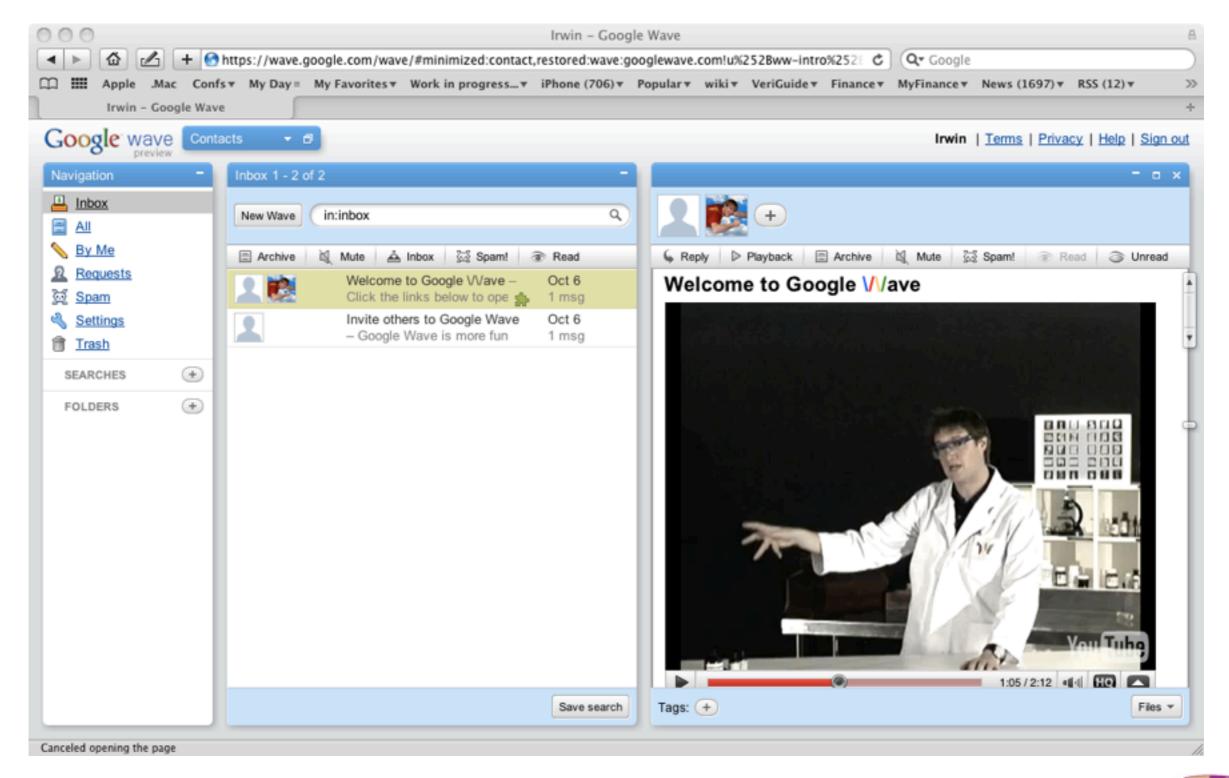
- Social Media
- Social Network Theory and Models
- Link Analysis/Graph Mining/ Large Graph Algorithms
- Recommender Systems/
 Collaborative Filtering
- QA/Sentiment Analysis/
 Opinion Mining

- Human Computation/ Crowdsourcing
- Risk, Trust, Security, and Privacy
- Monetization of Social Computing
- Software Tools and Applications
- and many, many more...

Economist Intelligent Unit 2008

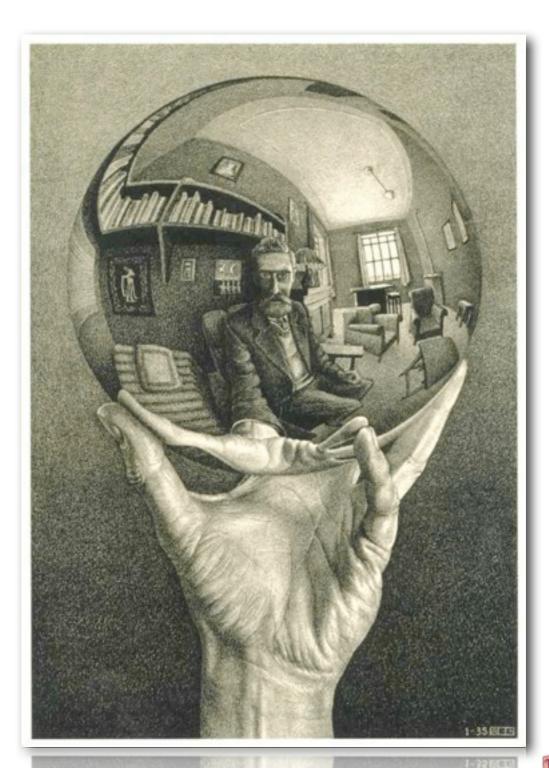


Google Previews WAVE



On the Horizon...

- Social Network Theory, Modeling, and Analysis
- Large Scale Algorithms
- CLOUD (broadband + wireless) and Web Services
- Monetization of Social Interactions
- Security & Privacy
- Web 3.0?



On-Going Research

Machine Learning

- Heavy-Tailed Symmetric Stochastic Neighbor Embedding (NIPS'09)
- Adaptive Regularization for Transductive Support Vector Machine (NIPS'09)
- Direct Zero-norm Optimization for Feature Selection (ICDM'08)
- Semi-supervised Learning from General Unlabeled Data (ICDM'08)
- Learning with Consistency between Inductive Functions and Kernels (NIPS'08)
- An Extended Level Method for Efficient Multiple Kernel Learning (NIPS'08)
- Semi-supervised Text Categorization by Active Search (CIKM'08)
- Transductive Support Vector Machine (NIPS'07)
- Global and local learning (ICML'04, JMLR'04)



On-Going Research

Web Intelligence/Information Retrieval

- A Generalized Co-HITS Algorithm and Its Application to Bipartite Graphs (KDD'09)
- Entropy-biased Models for Query Representation on the Click Graph (SIRIR'09)
- Effective Latent Space Graph-based Re-ranking Model with Global Consistency (WSDM'09)
- Formal Models for Expert Finding on DBLP Bibliography Data (ICDM'08)
- Learning Latent Semantic Relations from Query Logs for Query Suggestion (CIKM'08)
- RATE: a Review of Reviewers in a Manuscript Review Process (WI'08)
- MatchSim: link-based web page similarity measurements (Wl'07)
- Diffusion rank: Ranking web pages based on heat diffusion equations (SIGIR'07)
- Web text classification (WWW'07)

On-Going Research

Recommender Systems/Collaborative Filtering

- Learning to Recommend with Social Trust Ensemble (SIRIR'09)
- Semi-Nonnegative Matrix Factorization with Global Statistical Consistency in Collaborative Filtering (CIKM'09)
- Recommender system: accurate recommendation based on sparse matrix (SIGIR'07)
- SoRec: Social Recommendation Using Probabilistic Matrix Factorization (CIKM'08)

Human Computation

- A Survey of Human Computation Systems (SCA2009)
- Mathematical Modeling of Social Games (SIAG2009)
- An Analytical Study of Puzzle Selection Strategies for the ESP Game (WI'08)
- An Analytical Approach to Optimizing The Utility of ESP Games (WI'08)

Acknowledgments

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- Mr. Patrick Lau
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- Hao Ma (Ph.D.)
- Mingzhe Mo (M.Phil.)
- Dingyan Wang (M.Phil.)
- Wei Wang (M.Phil.)
- Haiqin Yang (Ph.D.)
- Connie Yuen (Ph.D.)
- Xin Xin (Ph.D.)
- Chao Zhou (Ph.D.)
- Yi Zhu (Ph.D.)

Irwin King Ricardo Baeza-Yates (Eds.) п на инпании инп и по инпинати H HE DECEMBER OF THE SECOND PROPERTY OF THE S HI THE THIRD HAVE IT SHAFFFULL THE HITCHIST King · Baeza-Yates (Eds.) Weaving Services Weaving Services and People on the World Wide Web and People on the Weaving Services and Pon the World Wide Web Ever since its inception, the Web has changed the landscape of human experiences on how we interact with one another and data through service infrastructures via various computing devices. This interweaving environment is now becoming ever more embedded into devices and systems that integrate seamlessly on how we live, both in our working or leisure time.

For this volume, King and Baeza-Yates selected some pioneering and cutting-edge research work that is pointing to the future of the Web. Based on the Workshop Track of the 17th International World Wide Web Conference (WWW2008) in Beijing, they selected the top contributions and their original workshop manuscripts to be considered for this volume. After a second-round of reviews and selection, 16 contributions were finally accepted.

The work within this volume represents the tip of an iceberg of the many exciting advancements on the WWW. It covers topics like semantic web services, location-based and mobile applications, personalized and context-dependent user interfaces, social networks, and folksonomies. The presentations aim at researchers in academia and industry by showcasing latest research findings. Overall they deliver an excellent picture of the current state-of-the-art, and will also serve as the basis for ongoing research discussions and point to new directions.

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springer.com

World Wide Web







Workshop on Social Computing in Education 2009

Home New since last time: 1 file

http://groups.google.com/group/WSCE2009 Call for Papers



Workshop on Social Computing in Education (WSCE2009) in conjunction with SocialComp-09, August 29-31, 2009, Vancouver, Canada

Welcome to the workshop on Social Computing in Education (SCE2009). The workshop is held in conjunction with the SocialComp-09, Vancouver, Canada from August 29-31, 2009.

With the advent of Web 2.0 and related technologies, Social Computing has become a new paradigm in ways we communicate, learn, and educate. Social platforms such as wikis, blogs, twitters, forums, groups, podcasts, mashups, virtual worlds, and sites for social networking, recommender systems, social bookmarking, social news, knowledge sharing, etc. are generating novel ways we acquire, access, manipulate, process, retrieve, present, and visualize information in the teaching and learning space. The social media for education has become dynamic, ubiquitous, distributed, real-time, collaborative, bottom-up, many-to-many, value-based, and personalized. This workshop solicits contributions on using Social Computing and related technologies for education, the emerging applications of Web 2.0 as an educational platform, as well as privacy, risk, security, and policy issues associated in Social Computing for Education 2.0.

Economist Intelligent Unit 2008

In what ways do new technologies pose the greatest challenges and risks to colleges and universities? Select up to three. (% of respondents)

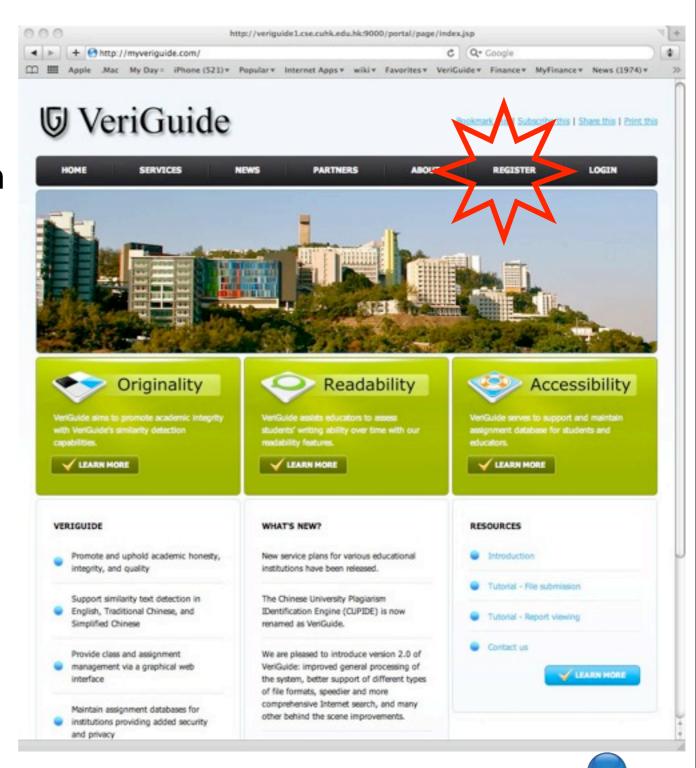
Potential increase in student plagiarism

5

Potential increase in student plagiarism

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- 1. Conference Papers 2005-Now
- 2. Journal Articles
- Books, Edited Books & Proceedings
- 4. Book Chapters
- 5. Conference Papers 2000-2004
- 6. Conference Papers 1994-1999
- 7. Theses
- 8. Presentations

PROFESSIONAL ACTIVITIES

- 1. Professional Achievements
- 2. Awards
- 3. Grants
- 4. Teaching
- 5. Education Excellence
- 6. Demos & Software
 - I. S Finding Experts Demo
- II. MEMPM Matlab Toolbox
- 7. Conference Activities



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- Associate Editor of IEEE Transactions on Neural Networks (IEEE TNN)
- Associate Editor of IEEE Computational Intelligence Magazine (IEEE CIM)
- Vice-President and Board Member of Asia Pacific Neural Network Assembly (APNNA)
- Chair, Task Force on the Future Directions of Neural Networks (IEEE CIS)
- Chair, SIG and Regional Chapters Committee for Asia and the Pacific, (INNS)
- Director of International Programmes, Faculty of Engineering (ERGIP)
- Member of RGC Engineering Panel, The Hong Kong SAR Government
- Co-Founder, Co-Principal Investigator and Chief Technologist, The <a>VeriGuide Project
- General Co-Chair, Workshop on Social Computing in Education (WSCE2009), in conjunction with SocialComp'09
- General Co-Chair, Workshop on Social Web Search and Mining, in conjunction with CIKM2009
- Program Co-Chair, The first SIGMM Workshop on Social Media (WSM2009) in conjunction with ACM Multimedia 2009 (
 <u>ACM MM'09</u>), October 19-24, 2009, Beijing China

Research interests: Machine learning, social computing, web intelligence, information retrieval, multimedia information processing

Caltech's motto, "...the truth shall set you free."

News

Keynote, Invited Talk, Advisory Committee, Technical Program Committee Member, Reviewer, Panel Chair, Panelist, or Tutorial Speaker at () ICONIP'09, () CollaborateCom2009, () CIKM2009, () ACML'09, () ICCCI'09, () APSIPA ASC 2009, () WI'09, () SocialCom-09, () SIGIR2009, () IJCAI-09, () CASoN2009, () IWSSIP2009, () IJCNN2009, () FAW2009,

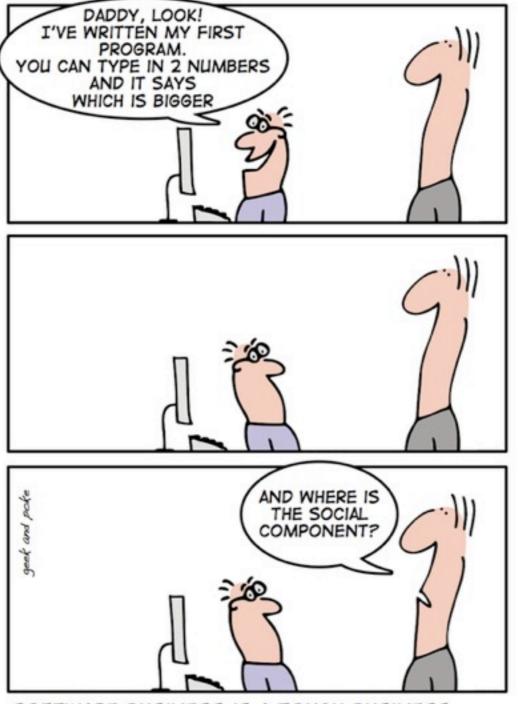
http://www.cse.cuhk.edu.hk/~king

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Are You Social Computing Ready?



SOFTWARE BUSINESS IS A TOUGH BUSINESS

Q&A