

# Open Social Learning Communities

*Ashwin Ram*

*Preetha Ram, Chris Sprague,  
Saurav Sahay, Hua Ai*



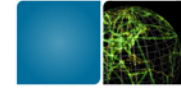
**Georgia  
Tech**



College of  
Computing



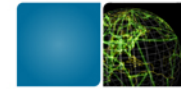
Cognitive Computing Lab



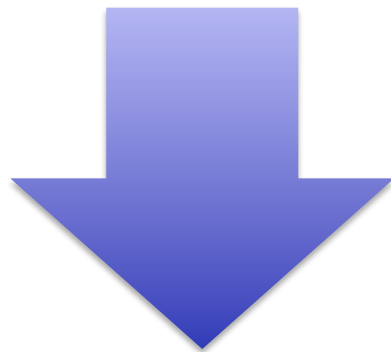
# My Background

- BTech      EE      IIT Delhi 1982
- MS      CS      Illinois 1984
- PhD      AI/CogSci      Yale 1989
- Professor      CS      Georgia Tech 1989–99
- Professor      CS/HCC      Georgia Tech 2003–
  
- Founder      Enkia 1999 (acquired)
- Founder      OpenStudy 2007

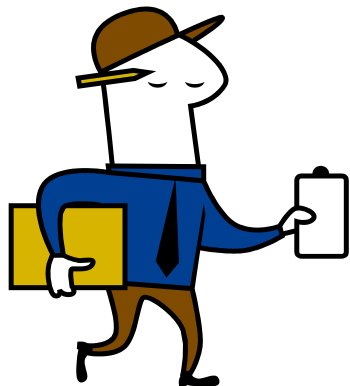




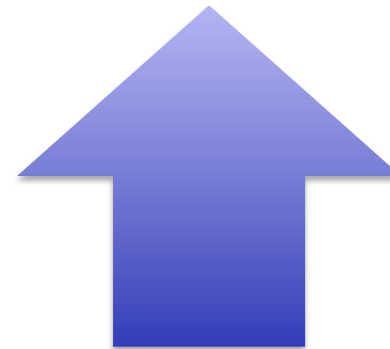
# Cognitive Computing

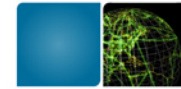


Cognitive Systems

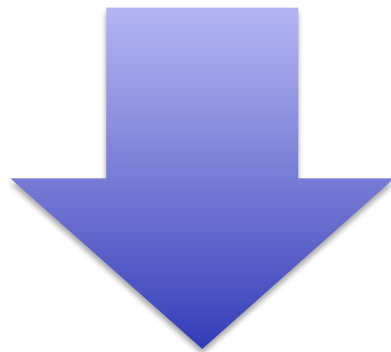


Cognitive Science

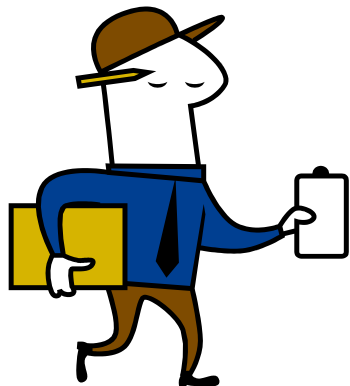




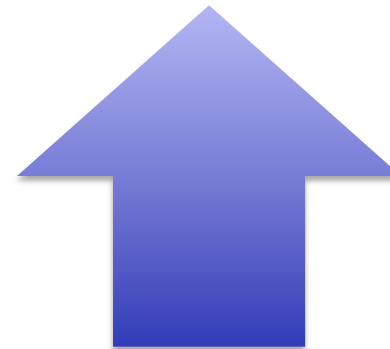
# Cognitive Computing

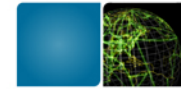


Intelligent Systems

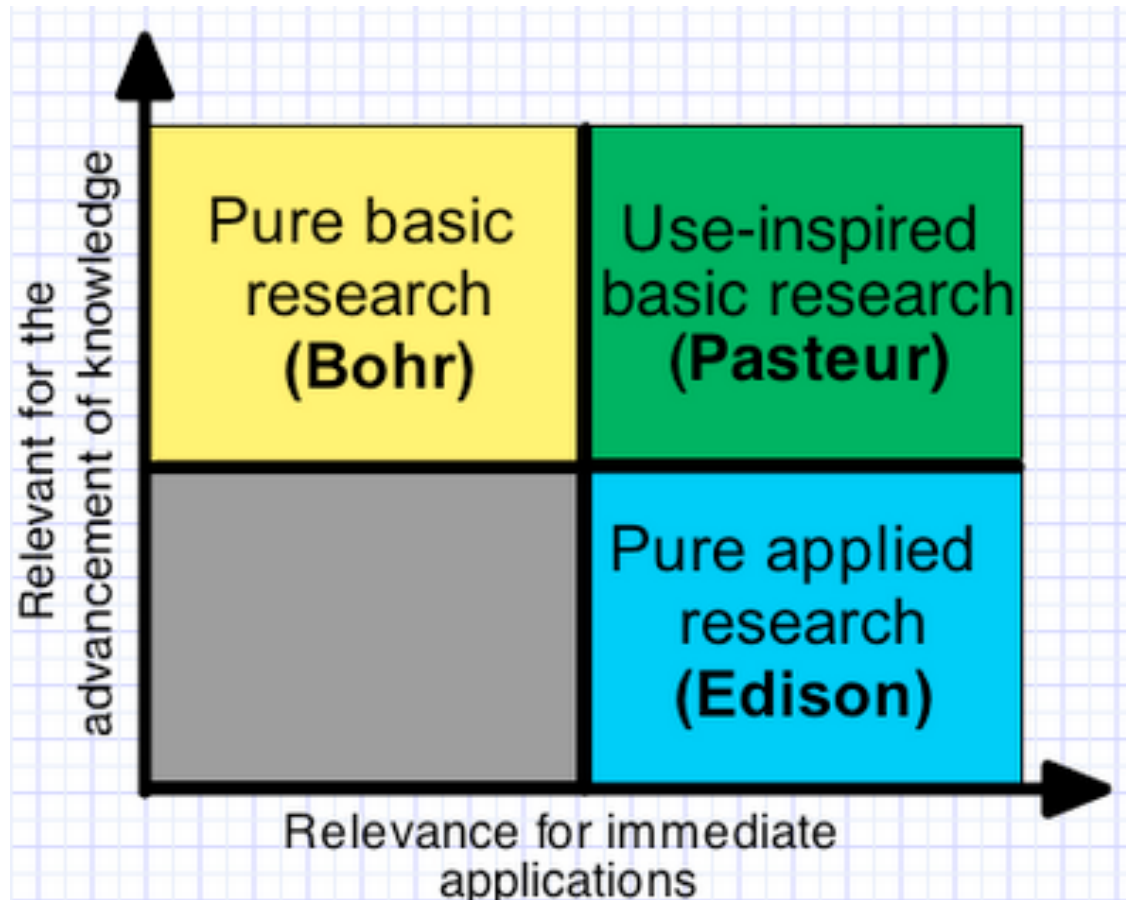


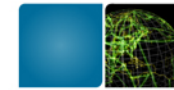
Human-Centered Computing





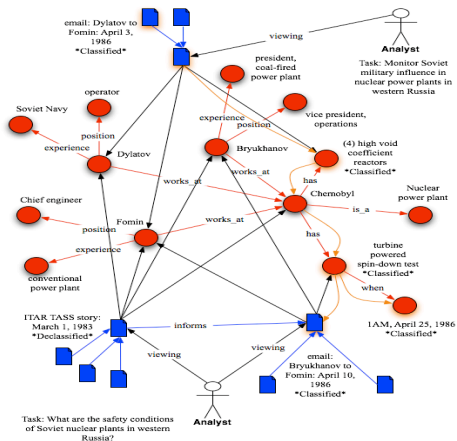
# Pasteur's Quadrant





# Application Areas

## Social Media



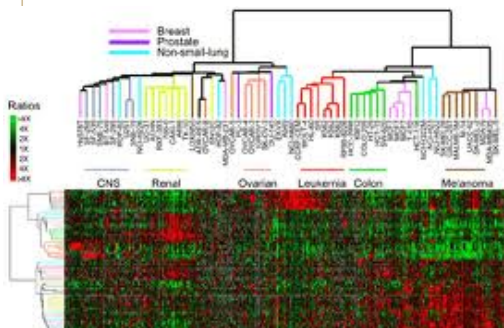
## Games



## Robotics



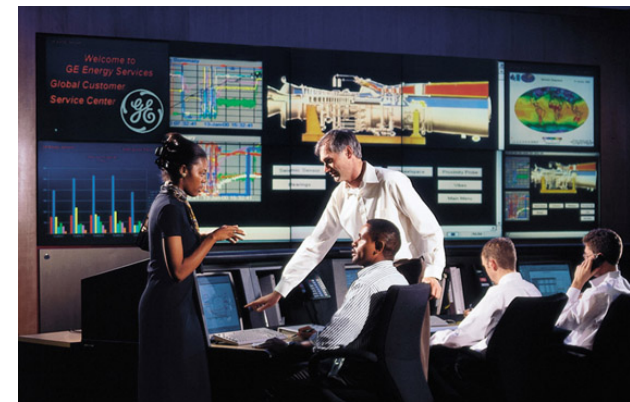
## Bio/Med/ Healthcare



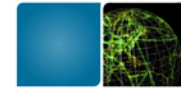
## Education



## Monitoring & Diagnostics

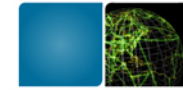


...and more



# Open Social Learning





# Education: What's the problem?



## Access

*More than one-third of the world's population is under 20. By 2006, 100 million qualified to enter a university will have no place to go.*

*To meet this staggering demand, a major university needs to be created each week.*

— Sir John Daniel (1996)





# Education: What's the problem?

## **Engagement**

*88% of high school dropouts have passing grades.*

— Gates Foundation study  
“Silent Epidemic” (2006)

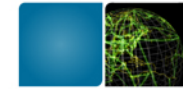
*47% of dropouts say “classes are not interesting”.*

*60% find video lectures “boring”.*

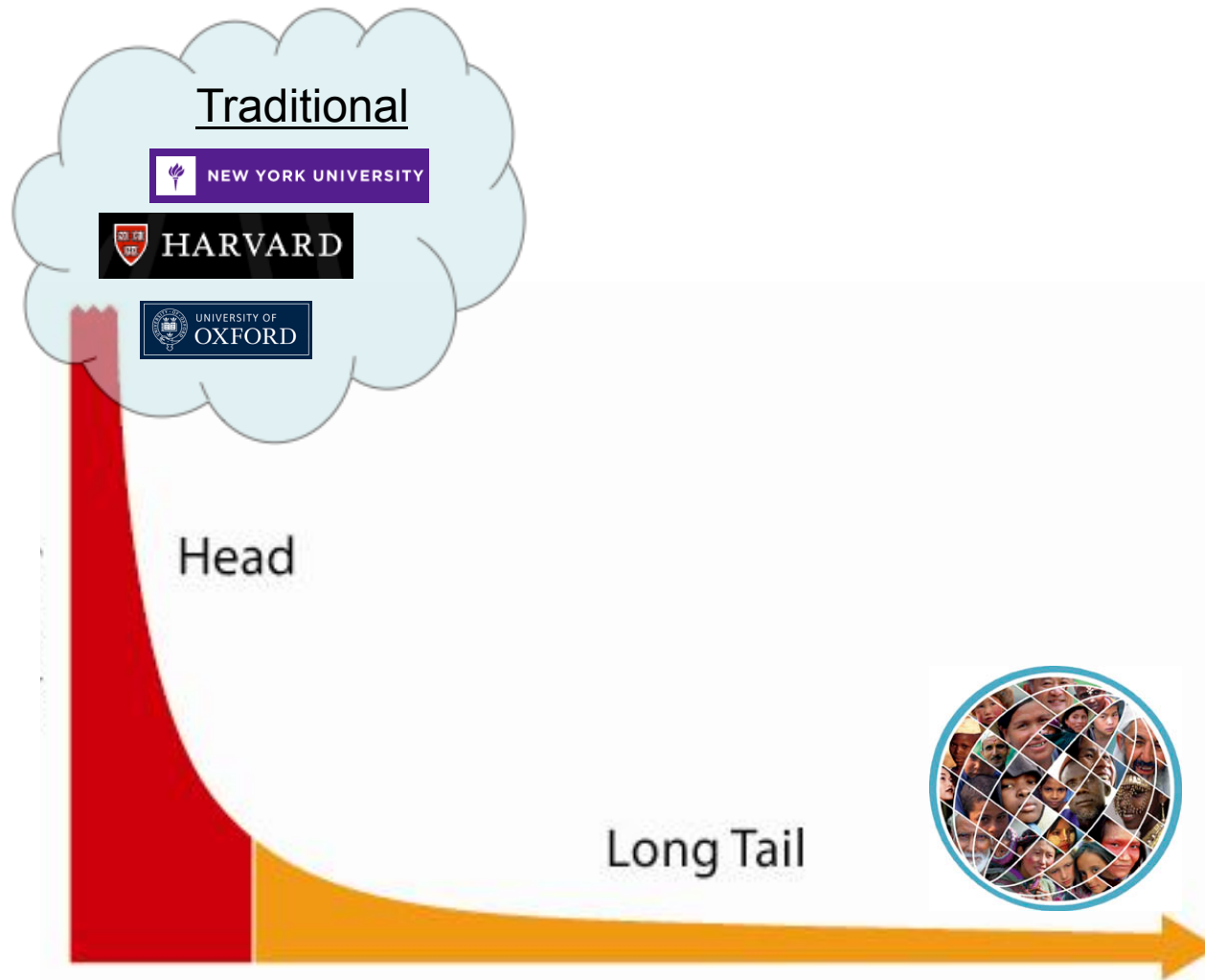
*60% read less when using e-textbooks.*

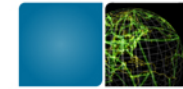


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From The New Yorker Book of Technology Cartoons.



# The Long Tail of Education



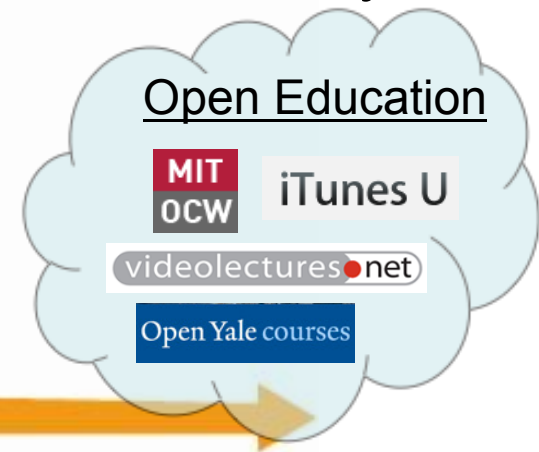


# The Long Tail of Education



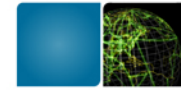
Head

MIT OCW: 9m users/yr  
iTunes U: 300m downloads  
Khan: 30k videos/day



Long Tail





# Education: Still a problem

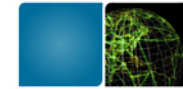


## *Engagement*

*60% find video lectures “boring”.*

Great video and talented presenters. My only complaint: I'd like to interact with others who are viewing the resources. Creating a one-way flow of information significantly misses the point of interacting online.

— *George Siemens (2007)*



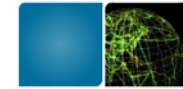
# What Engages Our Students?



*95% spend 10-15 hrs/wk on Facebook*

*80% go to Wikipedia*

*55% use IM for homework*



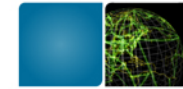
# What Engages Our Students?



*\$11B market*

“I'm calling for investments in educational technology that will help create ... educational software that is as compelling as the best video game.”

— *Barack Obama (2011)*



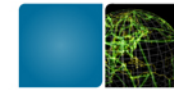
# Imagine “Open Social Learning”

*Imagine a Facebook where the point is to study together, not trade pictures and jokes.*

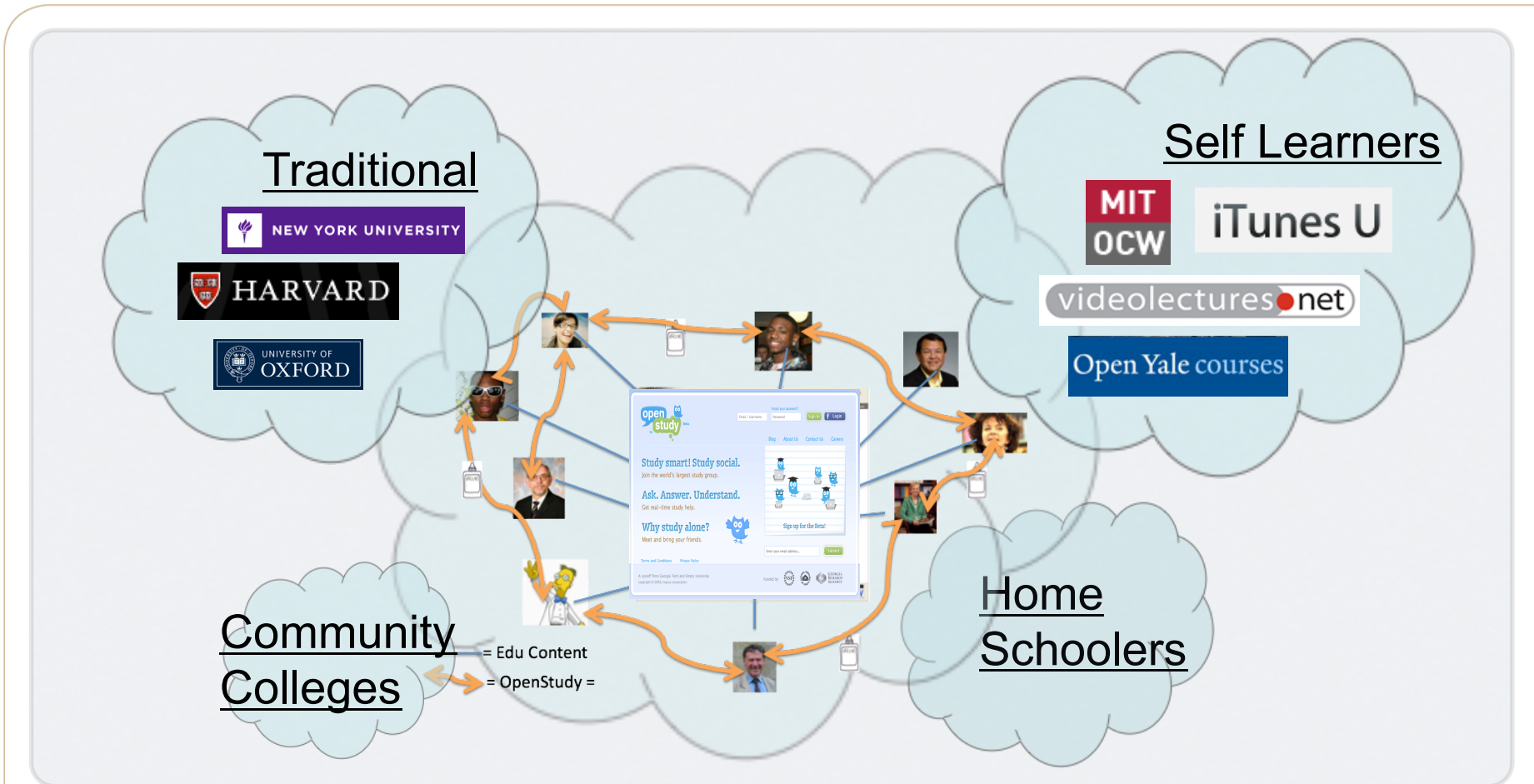


*Imagine a World of Warcraft where students earn points by helping each other learn.*

*Not educational games. Education experience itself is structured as a “social game”.*



# Open Social Learning







# OpenStudy

## Make the World Your Study Group

Get live help from other students. Choose a study group to get started.

<b>Mathematics</b> 10396 Students, 60 Online <a href="#">Get Help</a>	<b>Writing and English</b> 908 Students, 4 Online <a href="#">Get Help</a>
<b>Finance</b> 783 Students, 5 Online <a href="#">Get Help</a>	<b>Computer Science</b> 2318 Students, 6 Online <a href="#">Get Help</a>
<b>Physics</b> 831 Students, 7 Online <a href="#">Get Help</a>	<b>Chemistry</b> 352 Students, 4 Online <a href="#">Get Help</a>
<b>Biology</b> 289 Students, 5 Online <a href="#">Get Help</a>	<b>OpenStudy Feedback</b> 720 Students, 2 Online <a href="#">Get Help</a>

MIT

Purple Math

HelpWithFractions

Gates/Hewlett

Yale

Tutorial.Math.Lamar.ed

CalculatorSoup

NSF NIH

Michigan

FreeMathHelp

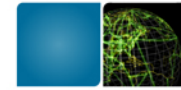
DavidDarling Info

GRA GT Emory



# The Team





# OpenStudy is...

“a social platform for learners who want to help each other study”

**THE CHRONICLE**

**TNW**

“you’re no longer alone—you have the world’s biggest classroom to turn to, any time, anywhere”

“a global study group”

**FOXNEWS**

 **ReadWriteWeb**

“global element is important...users will almost always find someone online in the study groups”

“one of ten most innovative companies in education”

**FAST COMPANY**



# OCW + OpenStudy



ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-00-introduction-to-computer-science-and-programming-fall-2008

intro to cs

Movies/TV Weather World Time Map World Time News (1393) Tweetie

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

OCW NEWS

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Home > Courses > Electrical Engineering and Computer Science > Introduction to Computer Science and Programming

## 6.00 Introduction to Computer Science and Programming

As taught in: Fall 2008

**DONATE NOW**

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**SUPPORT for this course from:**

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**Level:**  
Undergraduate

**Instructors:**  
Prof. Eric Grimson  
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- Assignments
- Exams

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**Archived Versions**

- Fall 2007

**Get Live Help**

**Course Study Group**

- ps2a help. hey, have't been keepin up my programming for the last month (Had family stuff on), so now im back and revised the last program f... 4 replies
- Are there other 8th-grade students studying algebra in this group?... 1 reply
- could someone complete the recursive definition of...

Many of the problem sets focus on specific topics, such as virus population dynamics, word games, protein sequences, or simulating the movement of a [Roomba](#). (Roomba photograph courtesy of [Stephanie Booth](#) on Flickr; virus image courtesy of the [CDC](#); Boggle photograph courtesy of [Angelina](#) on Flickr; protein image courtesy of the [Lawrence Berkeley National Laboratory](#).)

**Course Features**





# Community of learners



graciebrownie 0 3

? divided by 9=7 whats the mystery number?

an hour ago



AchoBishop 11 6

1 medal for this answerer. [Medal Given](#) [Undo](#)

let's call ? x, ok?

that would be  $x/9=7$  an hour ago



graciebrownie 0 3

0 medals for this answerer. [Good Answer](#)

ok

an hour ago



AchoBishop 11 6

1 medal for this answerer. [Medal Given](#) [Undo](#)

then multiply by 9 on both sides to get

$x=(7*9)=63$  an hour ago



AchoBishop 11 6

1 medal for this answerer. [Medal Given](#) [Undo](#)

so,  $x=63=?$  which is your answer! an hour ago



graciebrownie 0 3

0 medals for this answerer. [Good Answer](#)

ok thanks you:) an hour ago



AchoBishop 11 6

1 medal for this answerer. [Medal Given](#) [Undo](#)

No boundaries

From 3<sup>rd</sup> graders  
to college students  
to professionals

Anytime  
Anywhere



# Community of learners



**dryicegrl** 1 4

Use the Chain Rule to find  $dz/dt$ . (Enter your answer only in terms of  $t$ .)

$$z = \sin(x + 6y), x = 4t^2, y = 4/t$$

35 minutes ago



**daniel987600** 41 10

1 medal for this answerer.

$$x = 4t^2 \quad y = 4/t$$

$$z = \sin(4t^2 + 24/t)$$

$$dz/dt = \cos(4t^2 + 24/t) \cdot (8t - (24/t^2))$$
 34 minutes ago



**watchmath** 36 8

1 medal for this answerer.

We have  $dx/dt = 8t$  and  $dy/dt = -4/t^2$ .

Now

$$dz/dt = \cos(x + 6y) \cdot (dx/dt + 6dy/dt)$$

$$dz/dt = \cos(4t^2 + (24/t)) \cdot (8t - (4/t^2))$$
 33 minutes ago



**dryicegrl** 1 4

0 medals for this answerer.

$dz/dt =$

$$\delta(f)/\delta(x) * dx/dt + \delta(f)/\delta(y) * dy/dt$$

33 minutes ago



**watchmath** 36 8

1 medal for this answerer.

sorry we should multiply by  $(8t - (24/t^2))$  instead. 32 minutes ago

Multi-student  
study sessions

“Make the world  
your study group”





# Community of learners

## “Gamification”



**M**  
Michelle Choe  
[→ View M's detailed profile](#)

Lifesaver - 9 fans

[Become a fan](#)

School: Art Center College of Design

About Me: work hard, and play harder! P A A R T A Y !! ☆≡ ☆≡

### Achievements and Medals

**17 Medals**
**14 Achievements**



Mathematics

17

10

[View Details](#)



**mattfeury**  
Matt Feury  
[→ View mattfeury's detailed profile](#)

Star - 15 fans

[Become a fan](#)

School: Georgia Institute of Technology

About Me: C.S. major

### Achievements and Medals

**13 Medals**
**16 Achievements**



Biology

0

1

[View Details](#)



Computer Science

2

1

[View Details](#)



Mathematics

8

7

[View Details](#)



MIT 6.0 Intro  
Computer Science

0

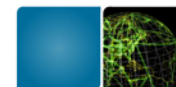
2

[View Details](#)



Cognitive Computing Lab





# 9 months of OpenStudy

## OCW

- MIT OCW
- Open Yale Courses
- OpenMichigan
- UC Irvine
- Notre Dame
- NYU
- Emory
- Georgia State U
- Korea University
- NCTU
- Tufts
- TU Delft
- Tokyo University
- Process.Arts
- African Virtual University
- Distance Education Univ. Costa Rica
- Monterey Inst. Technology  
Cognitive Computing Lab
- Purdue Online Writing Center

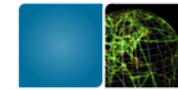
## OER

- CDC (TRAIN)
- SmartHistory (MOMA)
- Purple Math
- Tutorial.Math.Lamar.edu
- FreeMathHelp
- HelpWithFractions
- BiologyCorner
- CellsAlive
- Physics 1728.com
- HyperPhysics
- CalculatorSoup
- Videlectures.net
- Connexions
- DavidDarling Info
- HippoCampus
- Prof. Damodaran

## Community

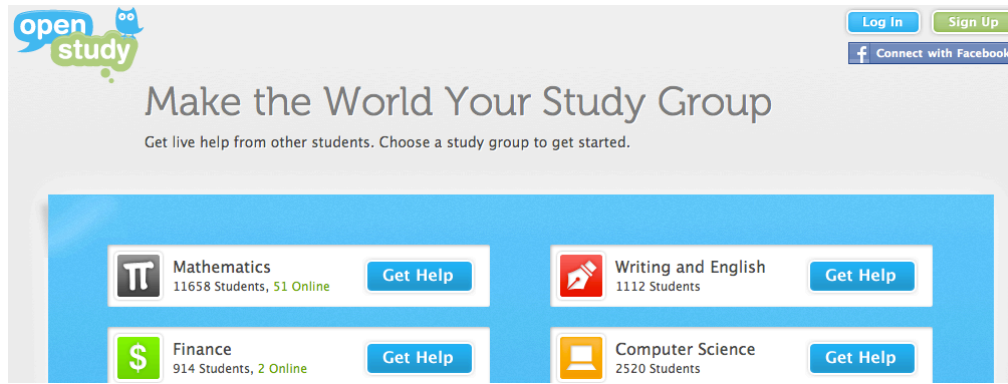
- 50,000 users
- 600,000 views/month
- 18 minutes/session
- 1,000 questions/day
- 70% answered in 5 min
- Study Groups
  - Math
  - Biology
  - Physics
  - Chemistry
  - Engineering
  - Comm & Media
  - Arts & Design
  - Finance
  - Computer Science



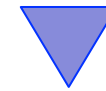


# How to use OpenStudy

## Students & Educators



Login or Facebook



Join group(s)

## Education Resources

### Select Widget Type

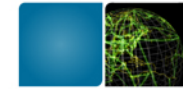


### Pick Location

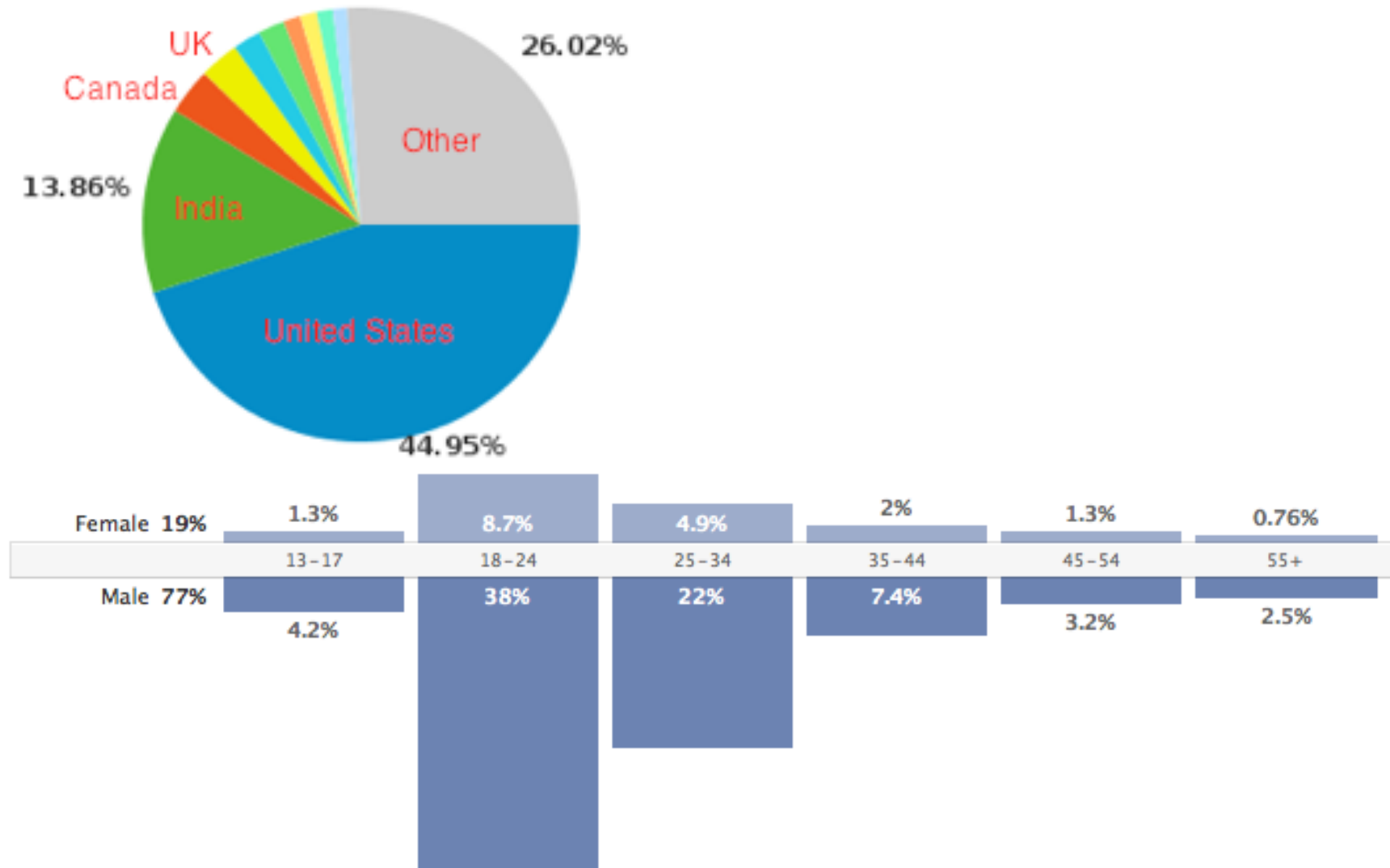


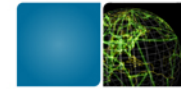
### Paste Code

```
<script
type='text/javascript'
id='openstudy-widget-
loader'
src='http://widget.openstud
y.com/javascripts/load.js?t
ype=button&color=auto&study
group='></script>
```



# User Demographics





# User Feedback



crestrideac: this is my first time on this program but its addicting trying to answer these random questions

“Addictive”



tacobell1234: i know right?

“Revolution”



iamignorant: This website is really a revolution



iamignorant: It has really changed the way we studied






# User Feedback


← Group home


0 replying • 2 viewing

 **Ganesh7789: This is really awesome. . :)**  
updated 18 days ago • 3 replies

 **shayshayglee5** 🏆 0 🛡️ 8  
**Thanks for your help guys i got 50 out of 50 on my math test**  
3 minutes ago


“Awesome”

 **sstarica** 🏆 43 🛡️ 9 *1 medal for this answerer.*  
coooooooooongggrraaaaaaaaaatsssssssssssssssssss ! ^\_^ 2 minutes ago

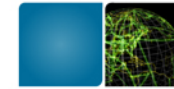
 **amogh** 🏆 10 🛡️ 6 *1 medal for this answerer.*  
We're always there,  
But keep in mind try doing it on your own!  
Good luck 2 minutes ago

Study help

Peer support

 **shayshayglee5** 🏆 0 🛡️ 8 *0 medals for this answerer.*  
i will a minute ago





# User Feedback

“Love it”



**TBates:** I love the community here, people are free to ask any question in math they have and people give step by step instructions and explain the problems as opposed to just giving an answer



**Steve**

83 days ago ←

I LOVE @openstudy – Awesome tool for students to study together online! Better than CourseHero – It’s (Twitter + Google Docs + Coursehero)

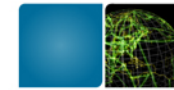


**Beth Harris**

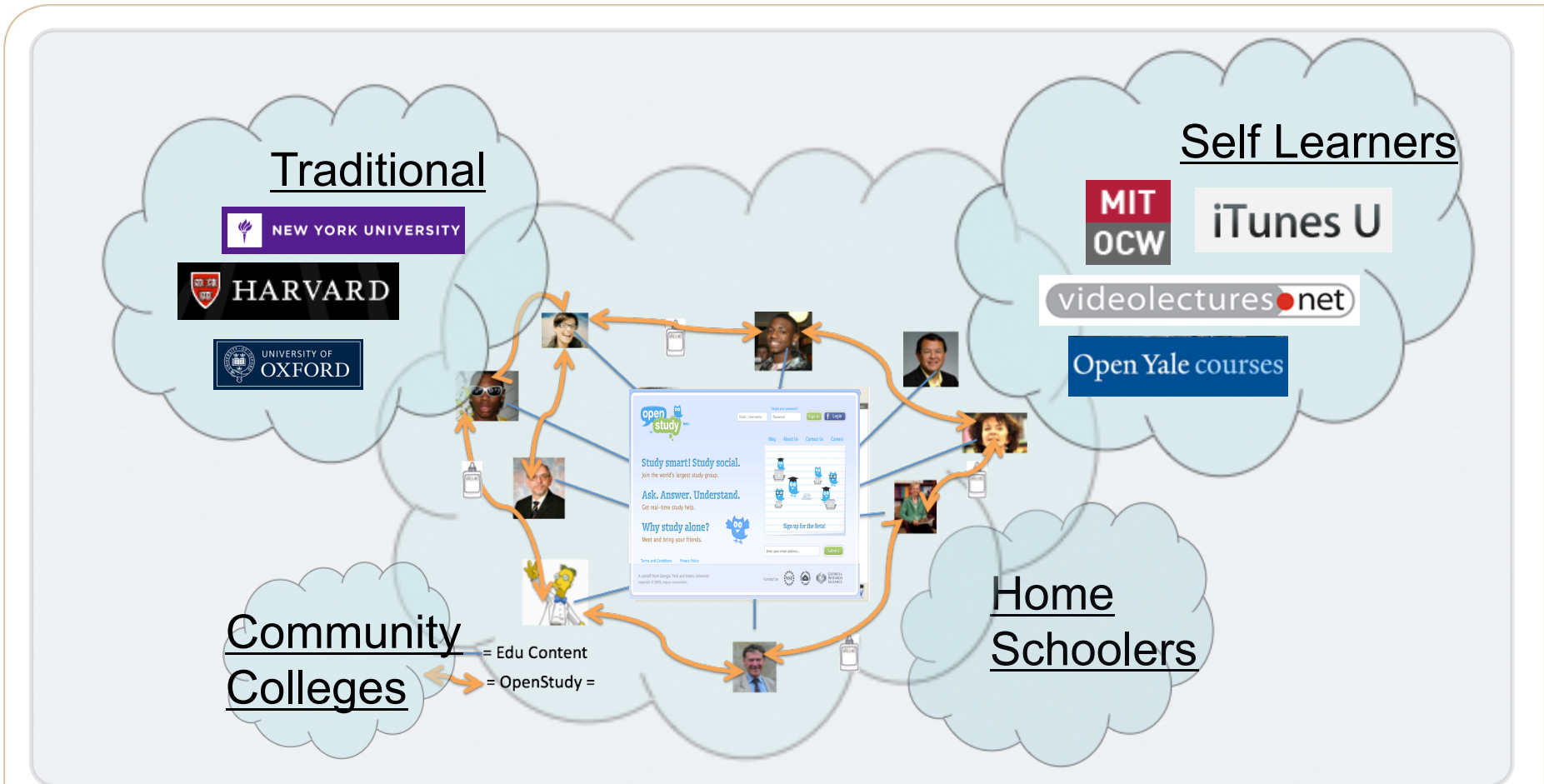
37 days ago ←

So impressed with @openstudy! #elearning #edtech #artsed #arthistory

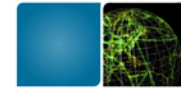
“Explanations,  
not answers”



# Open Social Learning



Open Communities of Learning Peer-to-Peer



# Open Social Learning

## Open Communities of Learning Peer-to-Peer

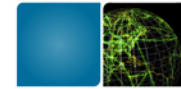
*“Massively multiplayer online learning” — students everywhere, connected, learning together*

*It is not accidental that social networks are so well adapted to education. [The] value is in the human connections it creates while relieving the drudgery of studying alone.*

*— Rich DeMillo, C21U*

*Let students teach each other, earning social capital via a system of game-like rewards.*





# Other Learning Communities

How do people get healthcare information?

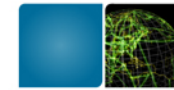


*"First, they do an on-line search."*

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From *The New Yorker Book of Technology Cartoons*.

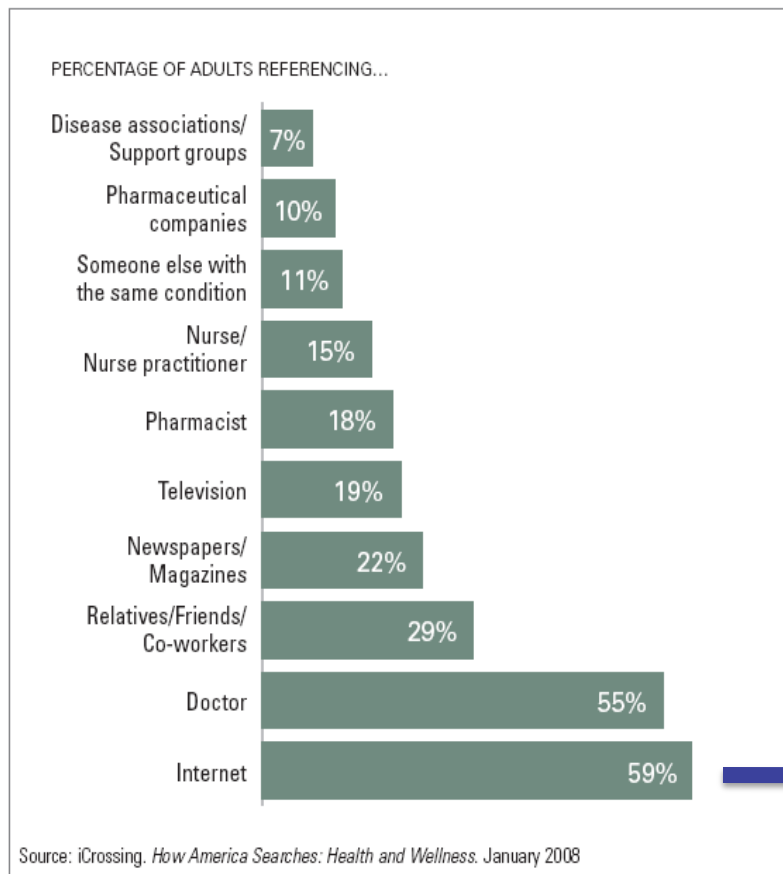






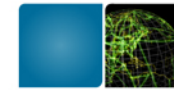
# Healthcare Information

**Figure 1. Sources Used to Find or Access Health- and Wellness-Related Information in the Past 12 Months**



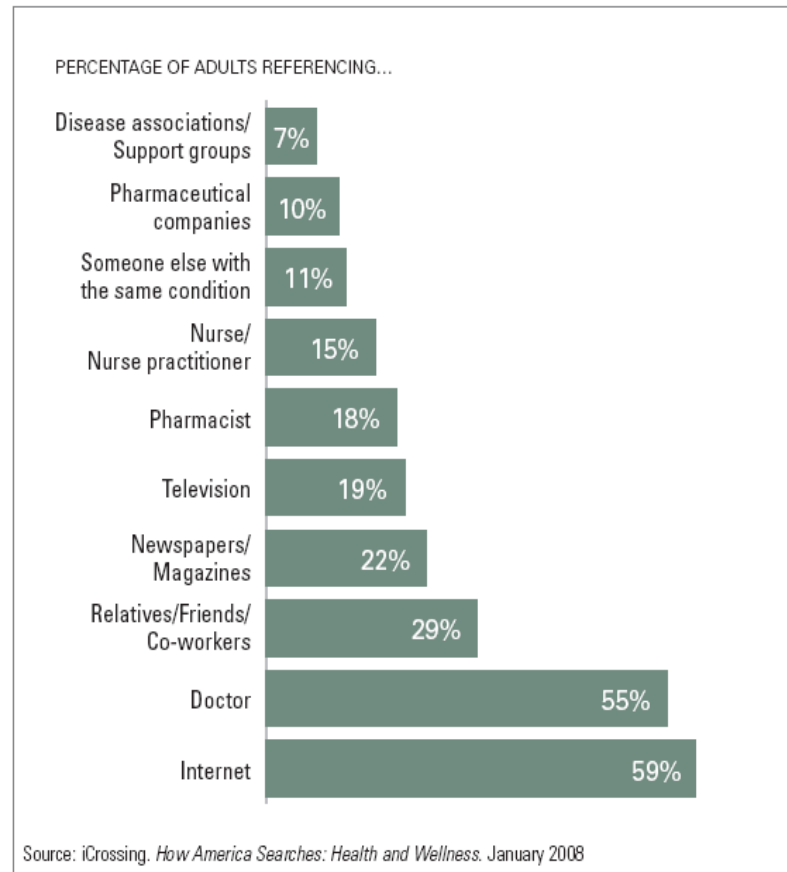
**Internet is the leading source of health and wellness information.**





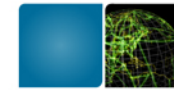
# Health 1.0 → Health 2.0

**Figure 1. Sources Used to Find or Access Health- and Wellness-Related Information in the Past 12 Months**



PLATFORM	EXAMPLES
Wikis	Wikipedia, FluWiki, WiserWiki
Blogs	DiabetesMine, HealthMatters (Healthline), WebMD
Social networks	OrganizedWisdom, PatientsLikeMe, DailyStrength, SecondLife, Sermo, ReliefInSite, NursesRecommendDoctors, TheHealthCareScoop, MySpace, Facebook
Video-sharing	ICYou, YouTube
Online forums	Yahoo! Groups, Revolution Health Groups, Google Health Groups, Groups@AOL, About Groups, iVillage
Podcasts	Johns Hopkins Medical Podcasts, NIH Podcasts, CDC Travelers Health, dLife podcasts for diabetes

# Cobot: Conversation Bot for Healthcare



# Cobot: Healthcare Info Access

Start New Conversation

I heard that flu shots may have side effects. Is it safe to get a vaccine when you are pregnant?

Start Conversation

Home My Community My Profile Help Welcom Kelly Smith Log Out

## H1N1 Flu

### People in Conversation

- [jennib](#) 2 likes 1 dislike
- [johns](#) 2 likes 1 dislike
- [sarah](#) 1 like 0 dislikes

### Related People

- [happydragon](#) 1 like 0 dislikes [Invite](#)
- [lady590](#) 1 like 0 dislikes [Invite](#)
- [curious33](#) 1 like 0 dislikes [Invite](#)

**Johns:** I am expecting a boy this December, and I am very worried about H1N1 flu. Since I'm pregnant, I am not sure the vaccine is safe enough for me or my baby. 2 likes 1 dislike

**Sarah:** CDC is recommending for pregnant women to get the H1N1 vaccine. You need to be much more concerned about your health than the baby's health. 2 likes 1 dislike

**JenniB:** Here is the article. [www.cdc.gov/flu/protect/](http://www.cdc.gov/flu/protect/) 3 likes 0 dislikes

Tags: H1N1 Flu, Pregnant women,

### Related Conversations

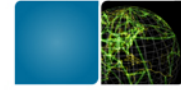
- [Flu Prevention for my child](#) 3 likes 1 dislike
  - [Flu at School](#) 3 likes 1 dislike
  - [Pregnent Women and Flu](#) 3 likes 1 dislike
- The death tate of pregnent women is extremely high according...

### Related Web Resources

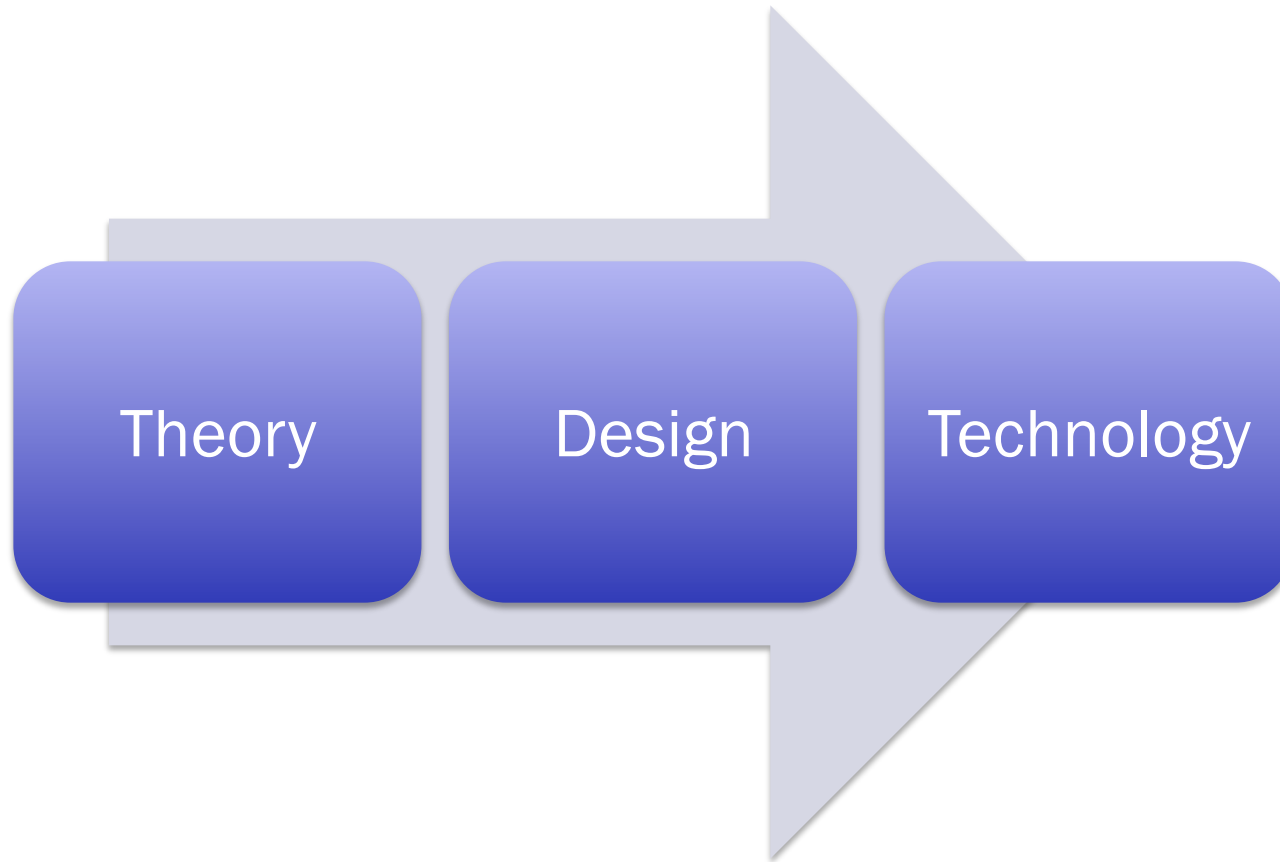
- [News for Vaccine](#) 178 likes 0 dislikes
  - [Influenza Vaccine Facts](#) 387 likes 10 dislikes
  - [Concerns about flu vaccine](#) 30 likes 1 dislike
- Yearly flu vaccination should begin in September or as soon as...
- Side effects of the inactivated flu vaccine are not common. In 19...

Your Joined Conversations (4)

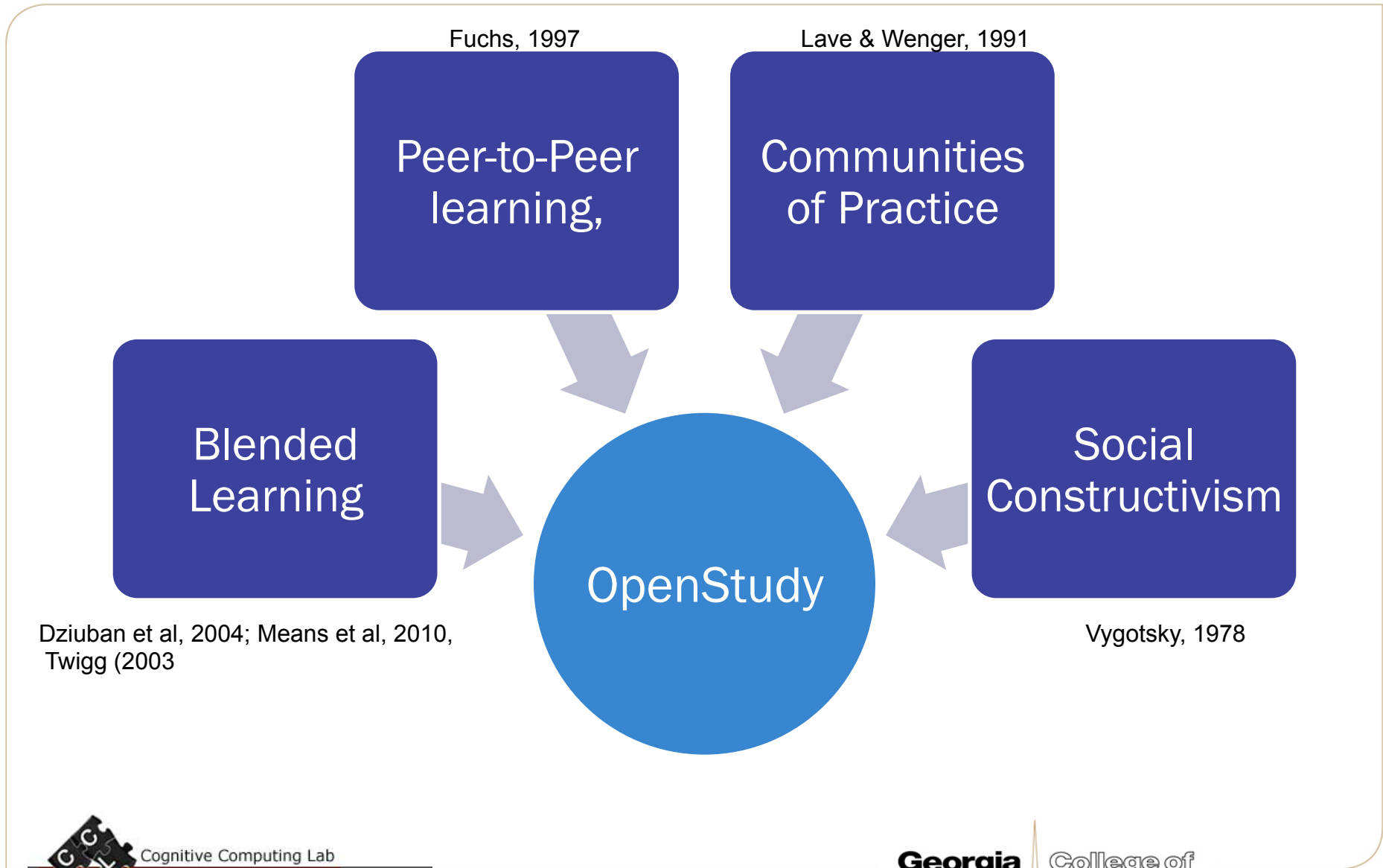
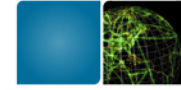
- [H1N1 Flu](#) X
- [Diabetes](#)
- [Allergies](#)
- [Heart Attack](#)

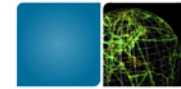


# Building the Site



# Learning Theories

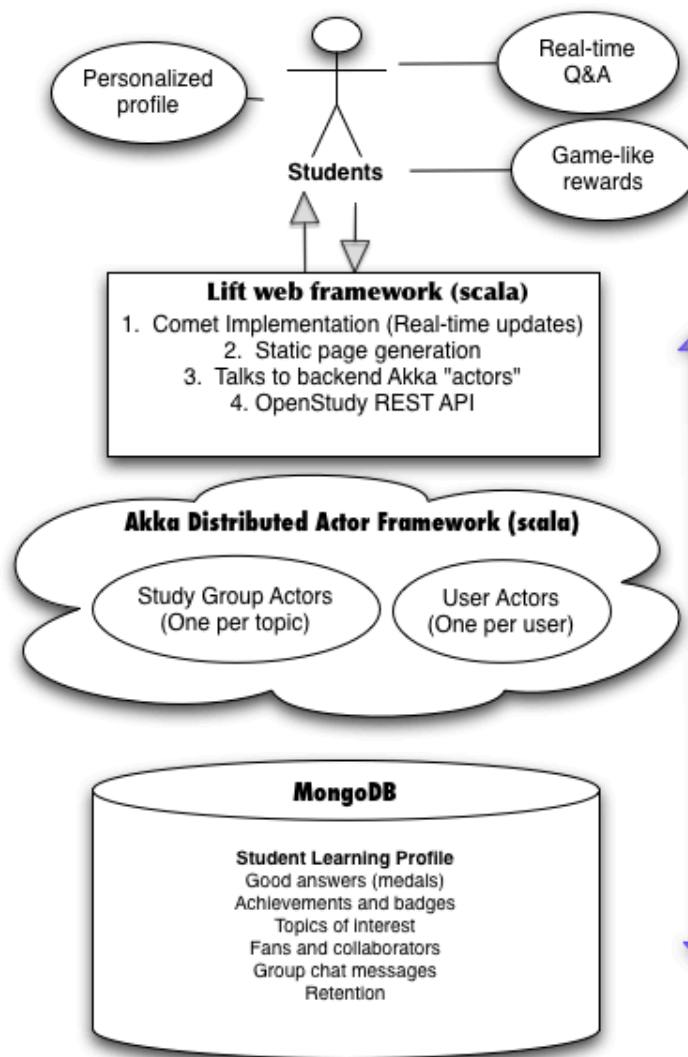




# Architecture



# Technology Stack

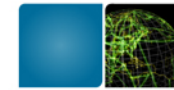


Amazon ec2 cloud

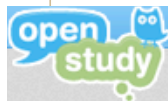
## IP

- Matching Engine**
  - Collaborators
  - Communities
  - Questions
- Learning Profiles**
  - Interests
  - Competencies
  - Soft skills
- Real time studying**
  - Live updates
  - Learning tools
  - Always on





# Need: Global Real-Time Conversations



## MIT 6.0 Intro Computer Science (OCW)

11412 Students, 7 Online

Ask a question...



**reckimini:** need some python practice problems...

updated 7 hours ago • 1 reply



**double\_o\_seven:** Hi. I need help with problem set 2. I have included the point i need help with in the omment at the bottom of my code. <http://dpaste.com/h...>

updated yesterday • 16 replies



**Koala2:** Hello, I found something that helped me a lot when trying to program in Python. The link is for a very useful free "library" of Python lang...

updated yesterday • 1 reply

[Terms and Conditions](#)

[Privacy Policy](#)



**Picasso** 0 0 0

0 medals for this answerer.

Santiago, Chile! 3 months ago



**aafter** 0 0 0

0 medals for this answerer.

San Diego, CA. 3 months ago



**Captain119** 0 0 0

0 medals for this answerer.

Ventura , CA 3 months ago



**4400** 0 0 0

0 medals for this answerer.

San Antonio, TX 3 months ago



**abby** 0 0 0

0 medals for this answerer.

Portland, Oregon - and I agree with avid! 3 months ago



**agatha** 0 0 0

0 medals for this answerer.

kenya (africa) 3 months ago



**bigmojo** 0 0 0

0 medals for this answerer.

Arlington TX. 2 months ago



**retrokid** 0 0 0

0 medals for this answerer.

Hungary 2 months ago

Christchurch, New Zealand. 62 years young and still willing to learn.



Group Chat



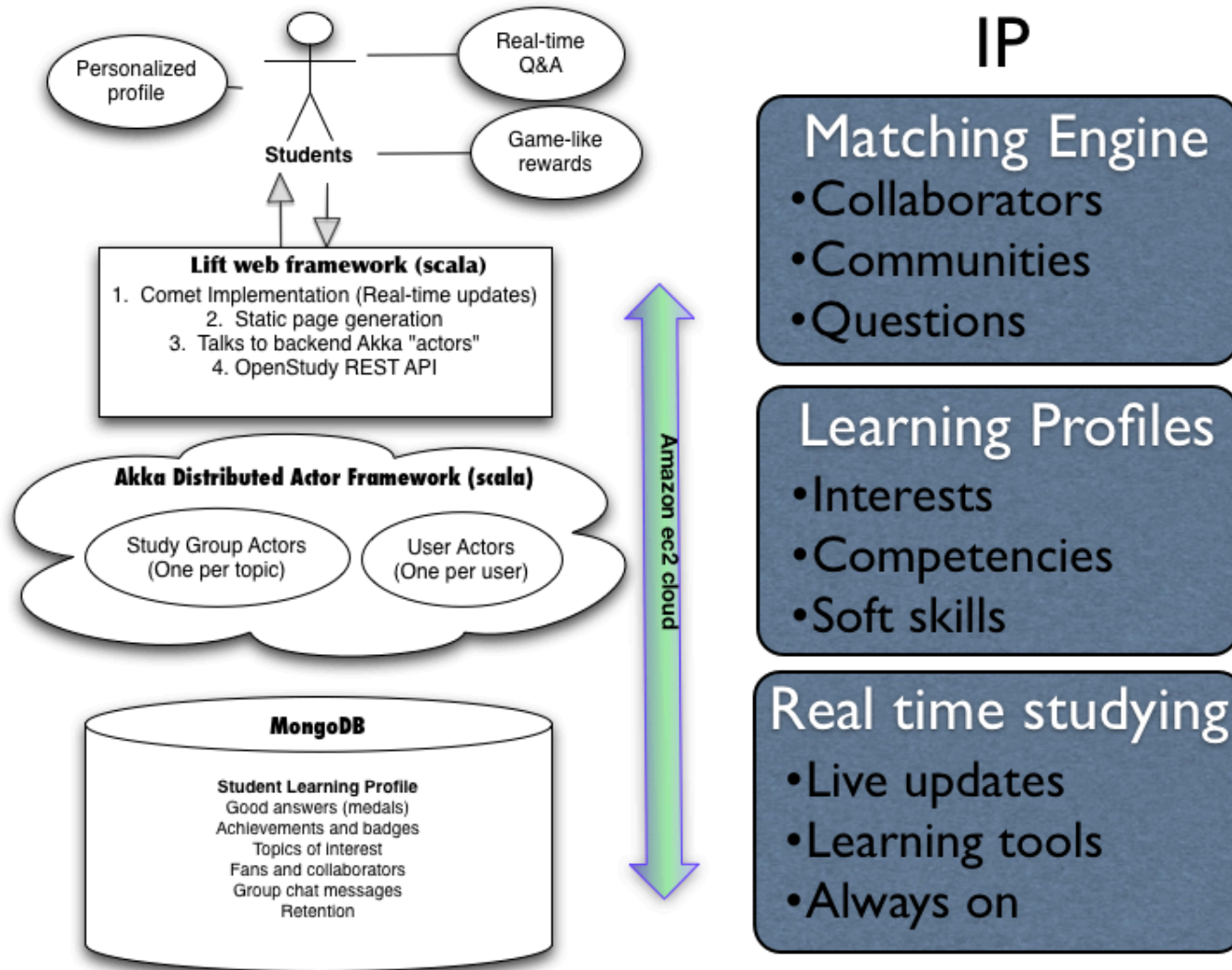
Cognitive Computing Lab

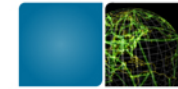
Georgia Tech

College of Computing



# Technology: Really real-time interaction





# Need: Finding Open Resources

Home Log in Sign up

## Mathematics

8856 Students, 41 Online

Ask a question...

**jfry:** Solve the system of equations:  
 $1/3x - 1/2y = -2/3$   
 $-2/3x + y = 4/3$ ...

updated 2 hours ago • 2 replies

**dq101:** The angle of elevation to the top of the radio antenna on the top of a building is 53.4 degrees. After moving 200 feet closer to the building...

updated 2 hours ago • 15 replies

**kamran khan:** find the complx?  $12 + 5i$

updated 2 hours ago • 15 replies

**bsanchez:** find the quotient:  
 $25c^4 + 20c^3$   
 -----  
 ....

updated 2 hours ago • 59 replies

**dq101:** The angle of elevation to the top of the radio antenna on the top of a building is 53.4 degrees. After moving 200 feet closer to the building...

updated 3 hours ago • No replies yet.

**asalia1:** BC trucking company charges \$56.00(p) to deliver 8 cartons (c) to a nearby town and \$78.00 to deliver 24 cartons find a linear equation usin...

updated 3 hours ago • No replies yet.

### Top Mathematics Resources

P

HWF

Math

MIT  
OCW

MIT 18.01 Single Variable Calculus (OCW)

### 41 Students Online

**DO**

0 1

is viewing [Write the equation in standard form for a line through \(3,2\) and that is par...](#)

**hdwill---**1928

0 1

is viewing [I have a friend that flies a crop duster\(sprayer\)---when spraying he is...](#)

**BaileyC**

0 1

is viewing [Solve the equation.  \$8x + 2x - 10 = 100, x =\$  I need this i...](#)

**seifpic**

0 2

is viewing [Cans of soup are sold in packs of 24, and packets of crackers are sold in groups...](#)

**robtobey**

12 6

is viewing [what is the exact value of  \$\cos 54^\circ \cos 8^\circ + \sin 53^\circ \sin 8^\circ =\$  Degrees](#)

**thatchickrayla**

1 8

is viewing [Can someone please answer this for me,  \$8x + 2x - 10, x =\$](#)

**tina-ann**

0 2

is viewing [solve for i d=iq](#)

**AnwarA**

33 9

is viewing [The current applied to a  \$10\mu\$  F capacitor is  \$i = 0.01\sin\(100t\)\$ . If the capacitor was ...](#)

**MathWhimz**

0 1

is viewing [A particle moves on the x-axis so that its velocity at any time t is greater than or...](#)

**amistre64**

183 9

is replying to [A particle](#)

**teresa**

0 2

is viewing [\(radical x\) + 8 /](#)

Cognitive Computing Lab

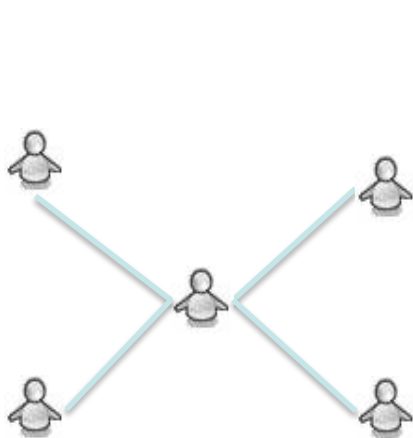


# Need: Finding Content and People

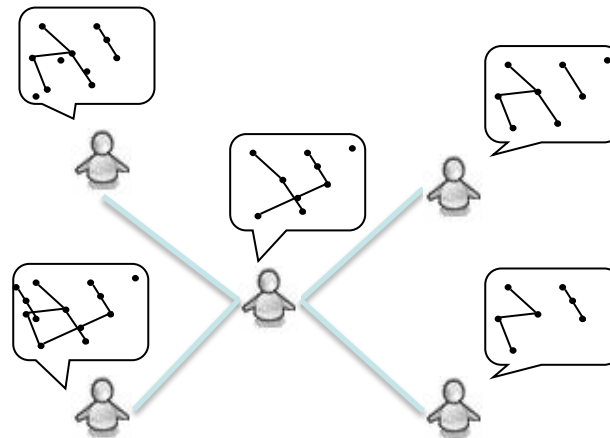
The screenshot shows a web application interface for an online community. At the top, there is a "Start New Conversation" button and a text input field containing the question: "I heard that flu shots may have side effects. Is it save to get a vaccince when you are pregnant?". Below this is a "Start Conversation" button. The navigation bar includes "Home", "My Community", "My Profile", and "Help", along with a user greeting "Welcom Kelly Smith" and a "Log Out" link. The main content area is divided into several sections: "Conversations to Join" with four entries (Pregnancy & Swine Flu, Swine Flu Vaccine, Female Health, H1N1 Flu and New Borns), "People you may talk to" with four user profiles (happydragon, lady590, curious33, julia49), and "Related Web Resources" with three links (News for Vaccine, Influenza Vaccine (Flu Shot) Facts, Anybody knows about flu vaccine?). On the right, there is a "Your Joined Conversations (4)" sidebar with buttons for "H1N1 Flu", "Diabetes", "Allergies", and "Heart Attack". A small pop-up window titled "Healthy Women" is visible in the bottom right corner.



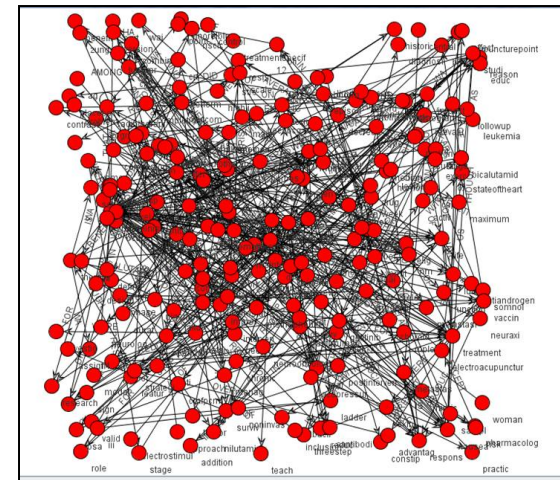
# Technology: Collaborative Info Search



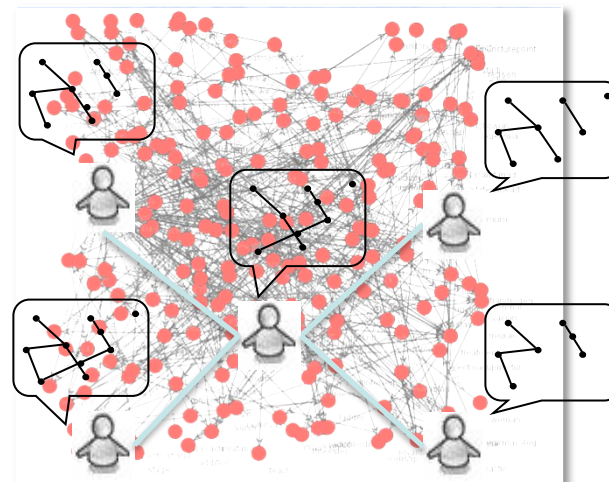
Social Graph



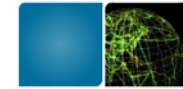
User Model



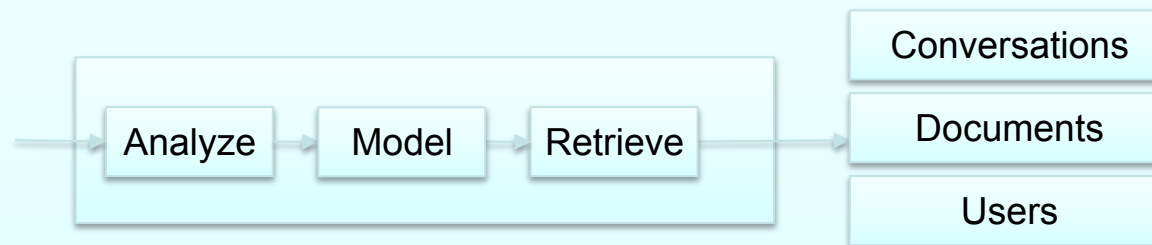
Semantic Network



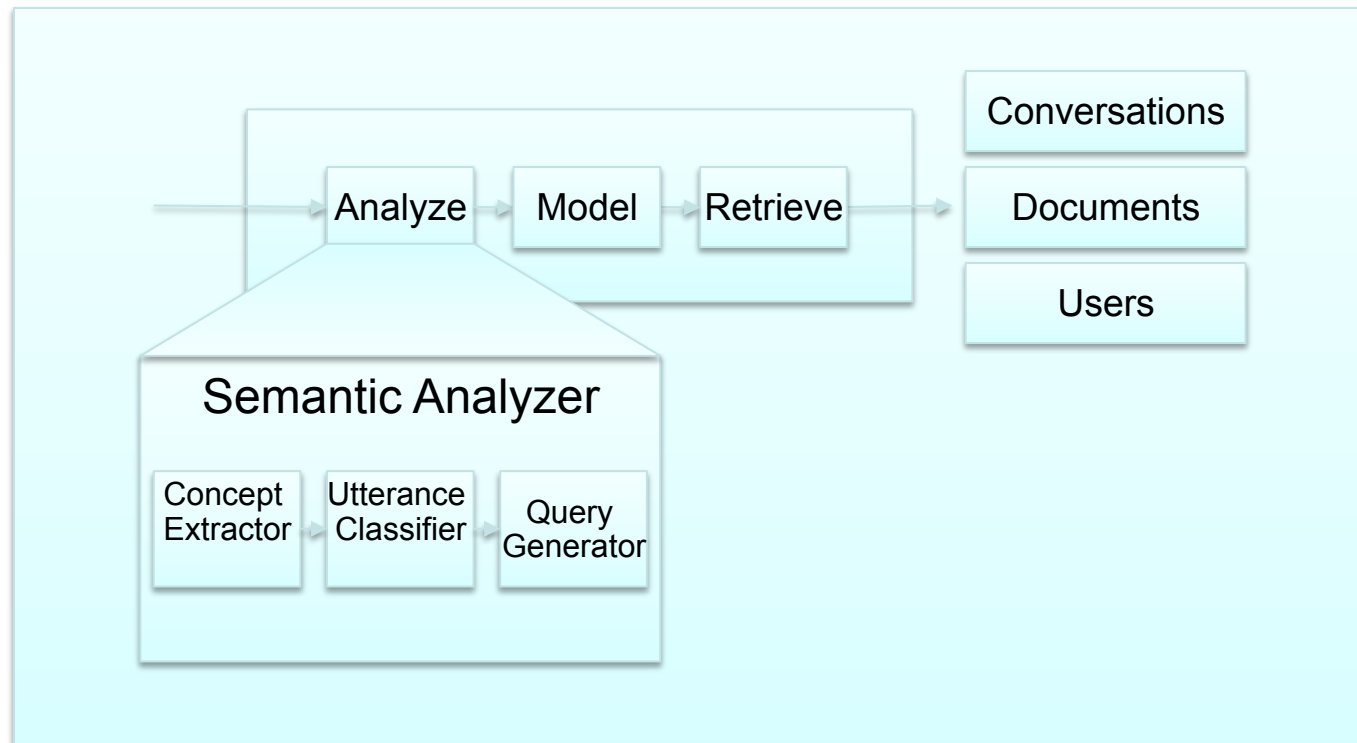
Socio-semantic Network

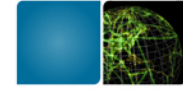


# Technology: Analysis Pipeline



# Technology: Semantic Analysis



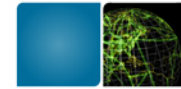


# Technology: Utterance Classification

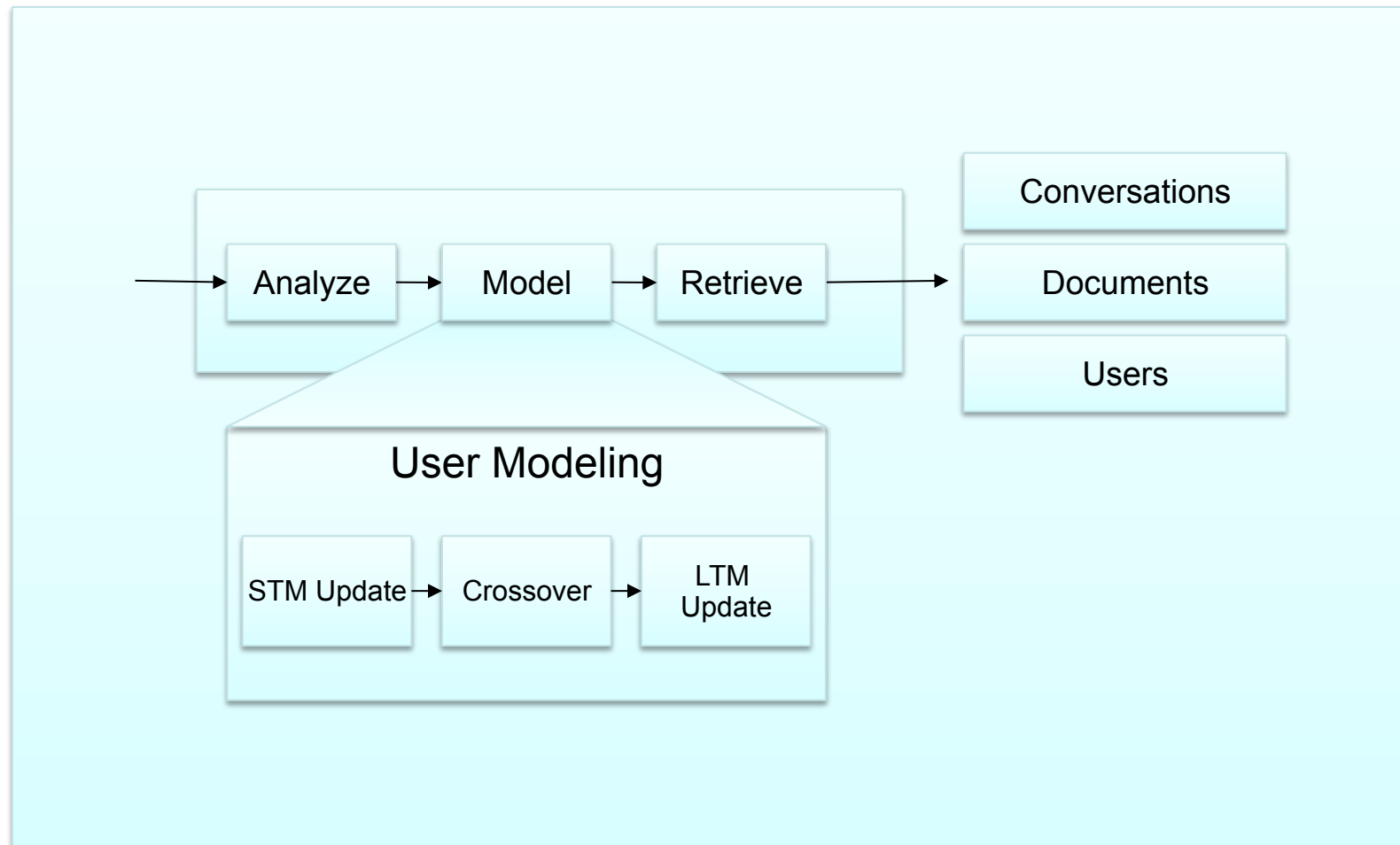
- Question
- Advice
- Disclosure
- Acknowledgement
- Interpretation
- Reflection
- Edification
- Confirmation

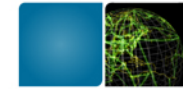




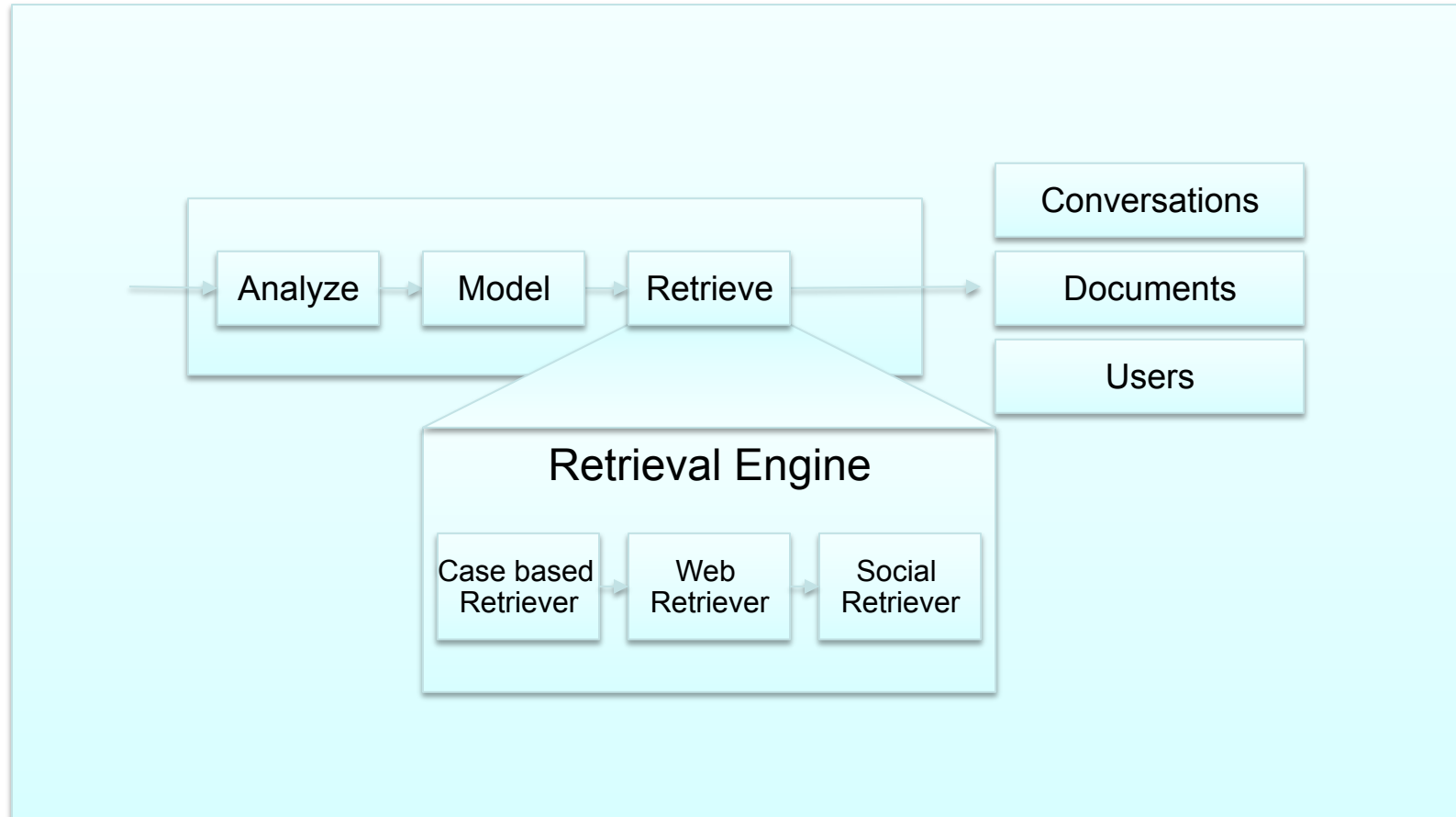


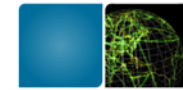
# Technology: User Modeling





# Technology: Socio-Semantic Search





# Technology: Recommendation Engine

## Case Specification:

$$C_i = (Q_i, [(r_1, h_{r1}), (r_2, h_{r2}) \dots (r_n, h_{rn})], [(c_1, h_{c1}), (c_2, h_{c2}) \dots (c_n, h_{cn})])$$

$$\text{Similarity}(Q_t, C_i) = \frac{Q_t \cap \text{Specification}(C_i)}{Q_t \cup \text{Specification}(C_i)}$$

$$\text{Relevance}(r_j, c_i) = \frac{h_{rj}}{\sum_{h_{rk} \subset C_i} h_{rk}}$$

$$\text{WRel}(R_j, Q_t, C_1 \dots C_n) = \frac{\sum_i \text{Rel}(r_j, c_i) \times \text{Sim}(Q_t, C_i)}{\sum_i \text{Exists}(r_j, c_i) \times \text{Sim}(Q_t, C_i)}$$

### Capturing User Interactions

Search/  
Brows/  
Rate

$R_1 \rightarrow R_2 \rightarrow R_3 \rightarrow \dots$

Natural  
Language  
Conversations

$C_1 \rightarrow C_2 \rightarrow C_3 \rightarrow \dots$

*Problem: Recommending Documents, Conversations and Users actively*

# Need: User Reputation (Social Capital)

**shadowriend** Champion - 89 fans

Antonio Salazar Cardozo You're a fan

School: Georgia Institute of Technology

About Me: Chief Software Engineer at OpenStudy. Half Greek, half Colombian, mix in some French and a lot of US. Code beautifully and honorably. Live by it.

Questions Asked

Questions Answered

**odubo:** : Help!!  $5n+5$   $7n$  overrr

---

$5n^2 + 35n - 40$   $3n...$

1 viewing • Has a good answer

**sumbody2:** how do you write 8% in math, is it .08?

updated 8 hours ago • Has a good answer

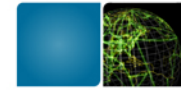
**UZ** place the word MATRIX, NUMBER, BISECT, OBTUSE, VECTOR, AND SECANT in the grid reading across in

## Achievements and Medals

**79 Medals**

**31 Achievements**

	<b>Biology</b>	1	1	<a href="#">View Details</a>
	<b>Chemistry</b>	0	1	<a href="#">View Details</a>
	<b>Computer Science</b>	15	4	<a href="#">View Details</a>
	<b>History</b>	4	2	<a href="#">View Details</a>
	<b>Mathematics</b>	40	8	<a href="#">View Details</a>
	<b>MIT 6.001</b>	2	1	<a href="#">View Details</a>

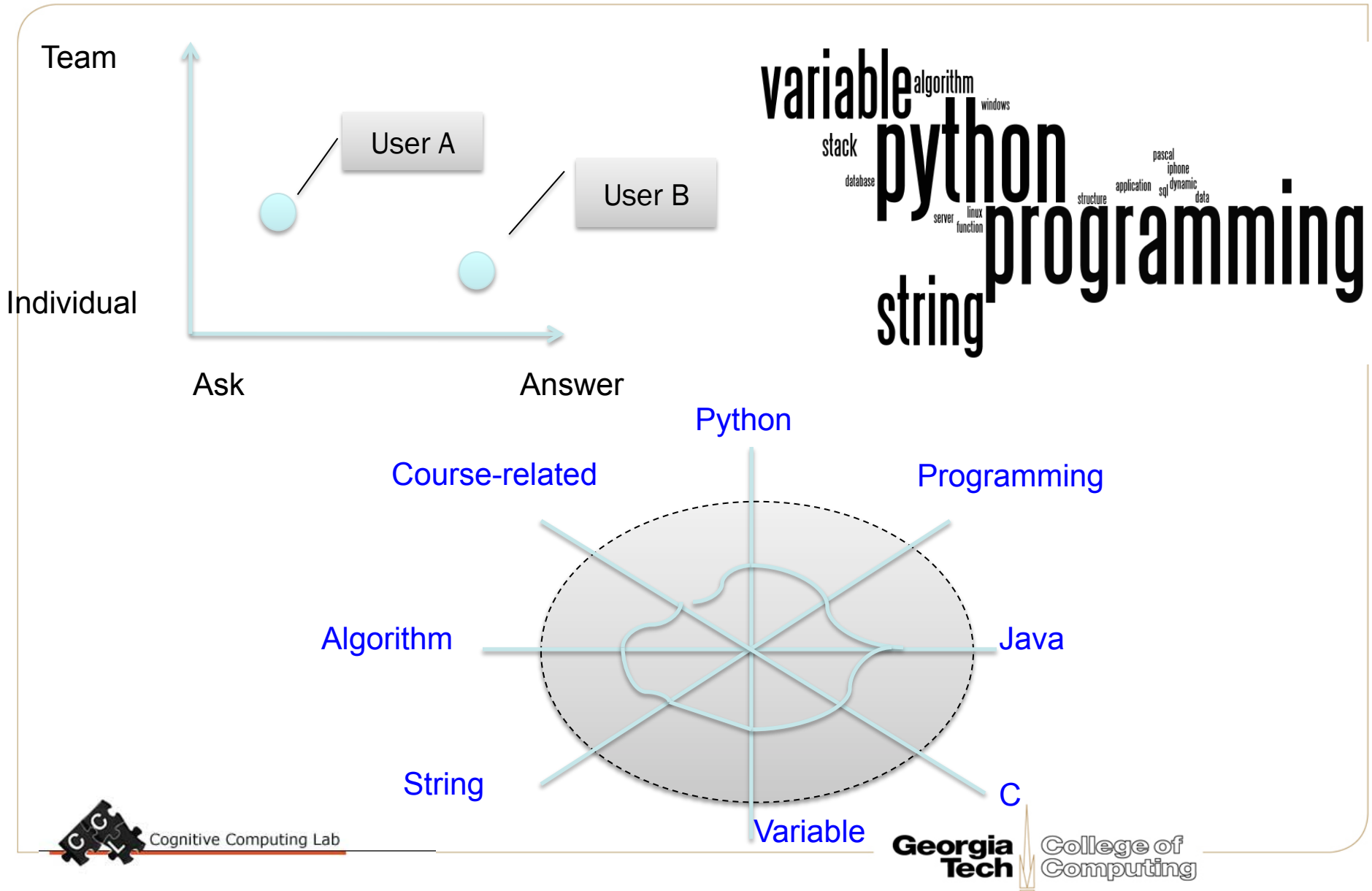


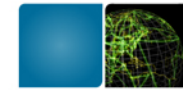
# Technology: Social Media Analytics

- + **Automatic Measures from System Logs**
  - + User login frequency
  - + Duration of Login
  - + Number of user contributions
  - + Number of medals/fans
  
- + **Student Self-assessment measures**
  - + Motivational Strategy of Learning Questionnaire (MSLQ)
  - + National Survey of Student Engagement (NSSE)
  - + Student Assessment of Learning Gains (SALG)



# Technology: Semantic User Profiling

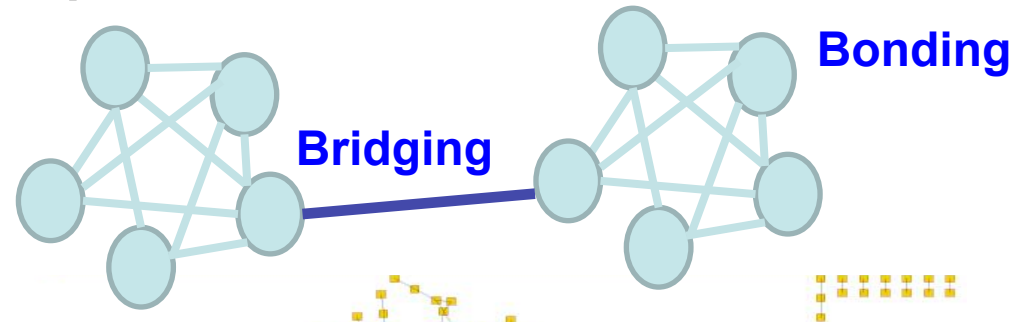




# Technology: Social Capital Analytics

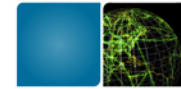
## + Bridging and Bonding Social Capital

- + Bridging: weak ties
- + Bonding: strong ties



## + Social Connection Map

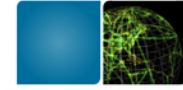




# Architecture



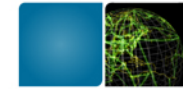




# Is It Working?

- OpenStudy launched Sep 2010
- 50,000 registered users from 151 countries
- 125,000 unique visitors a month
- Selected for Gates/Hewlett Foundation challenge grant
- Adopted by MIT, Yale, NYU, many others
- Part of MIT 10-year “billion minds” plan for OCW
- #1 brand in social study





# Education: Disruption Is Just Starting



Head

Long Tail

## Homework Help / Test Prep

- Koofers
- Cramster
- Coursehero
- Grockit
- Sparknotes
- eNotes

## Open Universities

- University of the People
- Learnhub
- P2P University

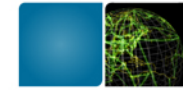
## Learning Management Systems

- Blackboard
- 9<sup>th</sup> Period
- Sakai (open source)
- Moodle
- eduCommons
- Nixty

## Mobile Learning

- Inigral
- Open Culture



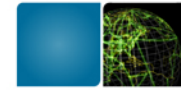


# Vision: MMO Learning



*A world-wide “guild” of people interacting, helping, collaborating, learning together.*

*“Addicted” to studying...  
and “loving” it.*



# Contact



© The New Yorker collection. All rights reserved.  
From *The New Yorker Book of Technology Cartoons*.

"You've got mail."

[www.cc.gatech.edu/~ashwin](http://www.cc.gatech.edu/~ashwin)  
[linkedin.com/in/ashwinram](https://www.linkedin.com/in/ashwinram)

[ashwinram@me.com](mailto:ashwinram@me.com)  
[@ashwinram](https://twitter.com/ashwinram)

