May 7th, 3:30 PM - 4:30 PM

Introducing: Classroom Salon

Ananda Gunawardena
Carnegie Mellon University, guna@andrew.cmu.edu

Follow this and additional works at: http://repository.brynmawr.edu/blended_learning
Classroom Salon

Let us know how access to this document benefits you.
Introducing Classroom Salon

Ananda Gunawardena
School of Computer Science
Carnegie Mellon University
Pittsburgh, PA

http://www.classroomsalon.org
Tone matching dictionaries
Expert humanist
Usability

Semantic similarity algorithms
Adaptive Book technologies
Scalability and performance

Alex Cheek
Interaction design
Information design

Joanna Wolfe
Reading and Annotations
Talk outline

- Concept of social Learning
  - Theory
  - Applications
- Introducing Classroom Salon
  - concept
  - Register, join, participate
  - Results (later)
- Use cases of Classroom Salon
  - Examples
  - helping students master critical skills
  - Encouraging transparency and collaboration
  - Results
- Conclusion
  - What we are working on
  - Q & A
The concept of social Learning
What is Social Learning?

- Learning within a social context
  - In an Institution
  - In a Study group
  - Online study group
- Learning by observation
  - Observing what other’s do
  - Observing what other’s do not do

"Learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them what to do. Fortunately, most human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action."

-Albert Bandura, Social Learning Theory, 1977
"Learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them what to do. Fortunately, most human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action."

-Albert Bandura, Social Learning Theory, 1977
Technologies that supports (some sort of) social Learning

- Twitter
- YouTube
- Google Docs
- Ning
- Facebook
- Discussion forums
- Blogs
- etc... etc

Each app is NOT designed for social learning. But some learning can occur. No data to support the impact on these technologies on learning.
Ingredients for social learning

• Develop a Model of engagement
  • Voluntary or directed
  • Immediate/short term benefits
  • long term benefits (grade)
  • transparency
Establish benefits to student

- Important formula
  - choice = P(success)*value – cost
- Articulate the Impact on Grade
- Encourage Learning by observation
- Encourage Knowledge organization
Ingredients for social learning

- Encourage Transparency
  - Openness (limited privacy)
- Develop Trust
  - Through Small salons (6-10 people)
  - Encourage get to know first activities (bio)
  - Follow and become thought leaders in the learning circle (salon)
Enabling Technology

- Technology
  - Pull technology with notifications
  - Quick access to tasks thru tags, and search
  - Recommendation systems
  - Short and focused activities
  - Tasks (reading, homework..) based activities
  - web and mobile enabled (easy access)
Introducing Classroom Salon
Learning Environment

- Classroom is a community (a group/a salon)
- Special interest groups (salons) can form within communities
- Salons extends beyond the walls of the classroom (blended learning)
- Learning can happen, anytime, anywhere
- Salons must be transparent (with some privacy rights)
- Salon’s must track user interactions like no other software
The Idea

integrate
context and interpretation
How?

Use documents, tags, questions, annotations and comments to design, deploy, track and analyze learning tasks
The Product

A web-based, mobile enabled learning management platform that transforms individual work like annotations and comments into dynamic communities using data aggregation, clustering and rich visualizations.

Funded by National Science Foundation, Gates Foundation, Innovation Works, Heinz Endowment, i6 innovation fund, department of Labor
Salon Abstraction

Person → interpret → Visual media → Create knowledge → Salon

@copyright 2012 Carnegie Mellon University
5-minute pause

Audience Participation
Set up activities

Funded by National Science Foundation, Gates Foundation, Innovation Works, Heinz Endowment, i6 innovation fund, department of Labor
Use cases of Classroom Salon
Active Reading
Active and Deep Reading

Methods of Measuring Learning Outcomes and Value Added

Developed in 2007 by Lori Breslow, Director, Teaching and Learning Laboratory, Massachusetts Institute of Technology (lb@mit.edu), with input from Anne Faye (Carnegie Mellon University)

For each of the following assessment methods (up to 3 areas), make a brief comment on what outcomes are expected.

- Freshman/senior surveys
  - Alumni surveys
  - Graduation rates
  - Number of students pursuing advanced degrees
  - Grades
  - Course evaluations (during the semester and end-of-semester)
  - Concept questions, "muddy cards," and other in-class techniques
  - Standardized tests of general education skills (e.g., Collegiate Learning Assessment)
  - Think-aloud protocols
  - Pre-post tests
  - Analysis of assignments designed to test conceptual understanding (e.g., concept maps, pro/con grids)
  - Observations of students performing a task
  - Analysis of student work products (e.g., exams, essays, oral presentations)
  - Senior thesis
  - Portfolios compiled over course of undergraduate study
Reading Guidelines

Read all chapters
Make at least 5 comments per chapter
Ask at least 3 questions per chapter
Choose tags (if necessary)
FIGURE 8.4
The Skull, Lateral Views (External and Internal).

APR Module 5: Skeletal System: dissection: skull:

Table:<br>
<table>
<thead>
<tr>
<th>Prominent Cavities (fig. 8.8)</th>
<th>Prominent Cavities (fig. 8.8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The skull contains several <strong>prominent cavities</strong> (fig. 8.8) with a volume of about 1,350 mL.</td>
<td>These cavities include the orbits (eye sockets), nasal cavity, and inner-ear cavities, and paranasal sinuses. They are connected with the nasal cavity, lined by cuboidal epithelium, with air. They lighten the anterior portion of the skull and improve resonance to the voice. The latter effect can be sensed in the way your voice changes when you have a cold and mucus obstructs the travel of sound into the sinuses and back.</td>
</tr>
</tbody>
</table>
Examples from University of Wisconsin-Milwaukee

- Login as a student
  - Jenny Albert
- Show how a student interact with the system
  - Participation – annotations and comments
  - Questions raised
  - Examples requested
  - Important: All questions raised in “context”

```
C:\Users\Ananda Gunawardena\Desktop\Perl and Salon>perl jenny_analysis.pl
Number of comments : 175
Number of questions : 109
Number of examples requested : 40
The ratio of commenting to annotations: 1.0187625171287
```
Global Responses
Global responses with breadcrumbs

Thibodeau, P.M., Boroditsky, L. (2012) Metaphors We Think With: The Role of Metaphor in Reasoning. PLoS ONE 8(2)

Metaphors We Think With: The Role of Metaphor in Reasoning

Paul H. Thibodeau, Lera Boroditsky

Department of Psychology, Stanford University, Stanford, California, United States of America

Abstract

The way we talk about complex and abstract ideas is suffused with metaphor. In five experiments, we explore how those metaphors influence the way that we reason about complex issues and forge for further information about them. We find that even the slightest instantiation of a metaphor (via a single word) can have a powerful influence over how people attempt to solve social problems like crime and how they gather information to make “well-informed” decisions. Interestingly, we find that the influence of the metaphorical framing effect is covert: people do not recognize metaphors as influential in their decisions; instead they point to more “substantive” (often numerical) information as the motivation for their problem-solving decisions. Metaphors in language appear to instantiate frame-consistent knowledge structures and invite structurally consistent inferences. Far from being mere rhetorical flourishes, metaphors have profound influences on how we conceptualize and act with respect to important societal issues. We find that exposure to even a single metaphor can induce substantial differences in opinion about how to solve social problems; differences that are larger, for example, than pre-existing differences in opinion between Democrats and Republicans.

Introduction

Both crime, and the criminal justice system designed to deal with crime, impose tremendous costs on society. Over 11 million serious crimes are reported in the United States each year [1], and the US has the highest per capita imprisonment rate of any country [2]. Despite being home to only 5% of the world’s population, the United States holds 25% of the world’s prisoners, with nearly 13 million [3]. Addressing the crime problem is a social policy. How do people con about solving the crime problem?

Public discourse about crime is saturated with metaphor. Increases in the prevalence of crime are described as crime waves, surges or sprees. A spreading crime problem is a crime epidemic, plaguing a city or infecting a...
Examples from University of Colorado

- Show how a student interact with the system
  - Participation
  - Analysis of data
Helpful votes
Find “experts”
Follow the “experts”

Gary Miller

- Salons
- Following
- Followers

- Charlotte DiLeonardo
- Patrick M. DiLeonardo
- Yitz
- Prof. Guna
Follow documents or people

Quickstart:
Choose an Activity:
- Create a Document
- Join a Salon
- Start a Salon
- Edit my Profile

Choose your Workspace:
- My Salons
- My Documents
- My Recent Documents

See Documentation:
- Using Salon in the Classroom
See Video Guides:
- Video Guides

Feeds:
Jan 0 NaN 12:00 AM: Ji Hye Lee responded to question 524
> Selection sort takes more time to do comparisons and sometimes requires more memory for sorting and so takes longer.

Jan 0 NaN 12:00 AM: Jason Kohlburn responded to question 524
> Insertion sort is more adaptable than selection sort, meaning that on lists that are more sorted, selection sort will perform better. Selection sort is inefficient even if the list is almost sorted.

July 10, 2011, Mark Vehak joined the Carlow University Salon
Bio: Mark is a technology evangelist at Carlow University. He is passionate about new technologies.
Encouraging Transparency

ABOUT THIS SALON

name: 15-122F11-Challenging Questions
description: About this Salon
owner: Prof Guna
ID: 464
access: This Salon is open to all

DOCUMENTS IN THIS SALON

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Date Created</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture 01 questions</td>
<td>Prof Guna</td>
<td>2011/08/30</td>
</tr>
<tr>
<td>HW0 Questions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>About loop invariants</td>
<td>Prof Guna</td>
<td>2011/09/18</td>
</tr>
<tr>
<td>15-122F11 - Ints</td>
<td>Matt Sarett</td>
<td>2011/09/04</td>
</tr>
<tr>
<td>15-122F11 - Contracts</td>
<td>Prof Guna</td>
<td>2011/09/23</td>
</tr>
<tr>
<td>15-122F11 - Midterm 1 - Practice</td>
<td>Prof Guna</td>
<td>2011/09/23</td>
</tr>
<tr>
<td>Seemingly identical code failing</td>
<td>Prof Guna</td>
<td>2011/09/26</td>
</tr>
</tbody>
</table>

MANAGE THIS SALON

Name: 15-122F11-Challenging Questions

About this Salon

Description: 

Security: (default) Anybody can join this Salon.

@ Copyright 2011 Carnegie Mellon University
Improve Communication

When context is important in communication use salon...

...focused Salon conversations

@ copyright 2011 Carnegie Mellon University
Monitor Students
Monitoring Individual Students

Thomas Manzini

How time is spent

annotations
responses
discussions

Commenting on others

Performance in each unit

Salons Created: 2
Documents uploaded: 6
Annotations Made: 56
Responses Provided: 40
Commenting on others: 42
Open Discussions: 38

Filter

© copyright 2011 Carnegie Mellon University
Student Dashboard

DASHBOARD STATISTICS

Andy Guna
Made 50 annotations to date.
Last annotation was made on 12/19/2011 10:46:54 AM.
Made 5 responses to date.
2 user liked responses made by him/her.

Hamid Asma
Made 22 annotations to date.
Last annotation was made on 6/8/2009 4:23:46 AM.
Made 4 responses to date.
0 user liked responses made by him/her.

Jim Vanides
Made 0 annotations to date.
Last annotation was made on ..
Made 0 responses to date.
0 user liked responses made by him/her.

Norton Gusky
Made 91 annotations to date.
Last annotation was made on 4/22/2012 4:24:26 PM.
Made 4 responses to date.
0 user liked responses made by him/her.

Junki Nakayama
Made 18 annotations to date.
Last annotation was made on 7/10/2010 4:42:45 PM.
Made 9 responses to date.
0 user liked responses made by him/her.

nsaphra
Made 54 annotations to date.
Last annotation was made on 7/31/2010 12:38:01 AM.
Made 18 responses to date.
1 user liked responses made by him/her.
Cluster users
Tone and Semantic Mapping
In summary
Track Reading

Ben Weaver
Observer Portrait (First Draft)
2/2/10

My father has always been up in the morning long before me. When I visit him in Virginia, I usually wake up, grab a jacket from the coat rack made of horseshoes, step out of the old country house that he splits with my great aunt, and make my way to huge red barn that sits in the middle of a field, far away from the road. In the barn, I find the horse whose name I the connection between that place and the

He's usually even further back, standing against a rough wooden fence post that
into the pale blue of morning. This time
and stained Wranglers, a belt with an
flannel shirt of muted oranges, and
on the fence, he takes a sip of coffee
horses approach.

Sunrise couldn't have been more than
a cowboy hat, the one with the turquoise place when he visited my sisters, my mother, and me in Ohio for band
concerts or graduation ceremonies. He never seemed to notice that awkwardness, probably
because some part of him stayed in Virginia with each visit.

"Finally decided to get up? I take it your sisters haven't." He cracks a lopsided smile, the one that we both employ frequently. He walks toward the fence gate, limping slightly and wincing at the bad knee that he's developed recently, finally reaching one of the older horses. He brushes off her mane and strokes the top of her nose, interacting as naturally as anyone else
might with an old friend or a sibling. He had told me before that this horse reminded him of his
childhood horse, Trigger, that he had on the dairy farm in upstate New York. "You missed an
Guide Teaching

Filters:
- Commenters
- Responders
- Tags
- Time

Statistics:
- Activity
- Comments
- Responses
- Helpful Votes

Comments by User

This chart details how many comments were classified as each tag.

- Can you give an(other) example of this?: 89.2% (107)
- This section confuses me.: 5.8% (7)
- What is the most important thing to remember from this section?: 0% (0)
- Where can I find more information about this?: 5% (5)
Problem to Solve: Round and Round

Cycling is a great way to stay fit while getting yourself to places you need to be. By the 1880s, the front wheel of a bicycle had a diameter of 64 inches. What was this wheel’s radius? What was its circumference? A bicycle wheel today has an averaged diameter of 26 inches. What is this wheel’s radius? What is its circumference? Organize this information into a table or chart. Using the information you record on the chart, compare the wheel sizes, diameters, radii, and circumferences.

Question 1: Understand

Question 2: Plan

Question 3: Solve

Question 4: Look back—Reflect
Clarify Assignments

A Simple Bitmap Image Manipulator
Individual Portion Due Date: Friday, July 1 @ 11:59 pm
Group Portion Due Date: Sunday, July 3 @ 11:59 pm

In this assignment, you will write a Java program that reads and writes the 24-bit Bitmap image format and performs a few basic manipulations on an image, such as removing color, flipping, rotating, and applying a mask.

The Assignment
The starter code contains skeletons of functions that you must implement. You will be graded on the functionality and style of your implementations of the following:

* Individually (in BMPManip.java) rotate.
* As a group (in BMPManip.java) flip, Image, indexRed, indexGreen, indexBlue, removeRed, flip, each pixel. These values are integers in the range 0-255, to store the complete information for one pixel. We will consider these bytes stored as a one-dimensional byte array. The first red-green-blue tuple is the lower left pixel of the image. Then, the pixels are given from left to right and in ascending rows so that the last tuple is the upper right pixel of the image.

* There is one important subtlety with the bytes storing the red-green-blue values of each pixel. Due to data alignment issues (take a systems-level class for more explanation), if the number of bytes storing the pixel data for one entire row is not a multiple of 4, padding bytes are added at the end of each row so that it is the next higher multiple of 4. After these padding bytes, the bytes for the next row are given in the same manner. This is extremely important to understand so that you modify the correct pixels of an image.

* This should be all that you need to understand of the file format. If you are confused, we recommend that you contact the TA, but feel free to also consult other sources, such as Wikipedia. However, be careful to not get confused by more complicated Bitmap formats.

Image Masking

* Image masking is a concept that we will use to perform special manipulations on a Bitmap image. A mask is an n-by-n two-dimensional array of doubles that represent weights (we will only consider odd n in our cases). The process of applying the mask is as
Improve communication

Obama Unveils His Latest Jobs Plan
By Adam Staropoli '14/World Staff

Published: Thursday, Sept. 8, 2011
Updated: Thursday, Sept. 8, 2011

There is no doubt that the August political fight was a dramatic blow to President Obama's political capital, which was dramatically weakened with many questioning his ability to effectively run the country. Now, with the 2012 presidential election picking up steam, prospects looking more difficult with each passing day, it is with the interests to put all the focus on jobs. With his address to a joint Sept. 8, Obama presented a plan to put America back to work and economy around.

Speaking to Congress at a special joint session, the president proposed the American Jobs Act, a legislative proposal seeking $400 billion to boost the American economy. He hawks note resembles another stimulus plan for businesses and get the American president would not be forceful (giving a more than generous call for putting America back to work and bicameral audience.

The American Jobs Act contains something that businesses hire and grow, and promises to modernizing America and putting family.
Measure Prior Knowledge

1. Can you call length and height on a 2-dimensional array?
2. What should the image look like after it has been masked?
3. How are floating point numbers stored in binary?
4. Is Java completely useless now that Python has come out?
5. Does Python also outclass C, why or why not?
6. How many cups does it take to hold Java?
Track student activities

- Dash board is a way to track activities of each/all student(s)
Salon Results
(so far)
Uses of Salon

- Over 10,000 registered users
- Over 15,000+ uploaded tasks documents
- Multiple uses of Salon
  - Textbook reading and annotations
    - 600+ students, 1000+ annotations / day
    - 200+ questions / day (filter)
- Crowd-sourcing work
- Reading and peer review
- Open homework
- My Notebook
If you have any problems compiling or running your code as described here, you should contact the course staff. Submitting. Once you've completed some files, you can submit them by running the command

```bash
handle -a hw1 <file1>.c ... <fileN>.c
```

You can submit files as many times as you like and in any order. When we grade your assignment, we will consider the most recent version of each file submitted before the due date. If you get any errors while trying to submit your code, you should contact the course staff immediately.

**Annotations.** Be sure to include `//requires`, `//ensures`, and `//loop invariant` annotations in your program. If you decide to use the `assert` function, be sure to include the appropriate annotations at the beginning of your function.

**Style.** Strive to write code with descriptive variable names, good indentation, and consistent spacing. If you find yourself writing the same function twice, consider writing a generic function to handle that computation and use it in different places. Good style is sure to earn you good grades, provided that you know how to implement it.

**Image Manipulation Overview.**

The three short programming problems are related to manipulating images. An image will be stored in a one-dimensional array of integers, where each integer is a 22-bit value representing one pixel of the image. Pixels are stored in the array row by row, left to right starting at the top left of the image. For example, if a 5 x 5 image has the following pixel "values":

```plaintext
0x12345678
0x9abcdef0
0xcdef0987
0x76543210
0x87654321
```

You can submit files as many times as you like and in any order. When we grade your assignment, we will consider the most recent version of each file submitted before the due date. If you get any errors while trying to submit your code, you should contact the course staff immediately.

**Annotations.** Be sure to include `//requires`, `//ensures`, and `//loop invariant` annotations in your program. If you decide to use the `assert` function, be sure to include the appropriate annotations at the beginning of your function.

**Code.** Strive to write code with good style, succinct variable names, and consistent spacing. If you find yourself writing the same function twice, consider writing a generic function to handle it. We will read your code when we grade it. Feel free to ask on the course board if you're unsure of what constitutes good style.

**Image Manipulation Overview.**

The three short programming problems are related to manipulating images. An image will be stored in a one-dimensional array of integers, where each integer is a 22-bit value representing one pixel of the image. Pixels are stored in the array row by row, left to right starting at the top left of the image. For example, if a 5 x 5 image has the following pixel "values":

```plaintext
0x12345678
0x9abcdef0
0xcdef0987
0x76543210
0x87654321
```
Early results

Studies partially funded by National Science Foundation and Gates Foundation
Data from S12 pilots

- 1500+ students
- 1000 annotations/comments per day
- 60% of the comments are questions
- 20%-40% of students use tags to communicate with instructor
  - This passage confuses me
  - Can you give another example of this
  - Will this be on the test
  - Where can I find more information on this
What we are working on...
Evidence for a Collective Intelligence Factor in the Performance of Human Groups

Anita Williams Woolley,1* Christopher F. Chabris,2,3 Alex Pentland,3,4 Nada Hashmi,3,5 Thomas W. Malone3,5

Psychologists have repeatedly shown that a single statistical factor—often called “general intelligence”—emerges from the correlations among people’s performance on a wide variety of cognitive tasks. But no one has systematically examined whether a similar kind of “collective intelligence” exists for groups of people. In two studies with 699 people, working in groups of two to five, we find converging evidence of a general collective intelligence factor that explains a group’s performance on a wide variety of tasks. This “c factor” is not strongly correlated with the average or maximum individual intelligence of group members but is correlated with the average social sensitivity of group members, the equality in distribution of conversational turn-taking, and the proportion of females in the group.

As research, management, and many other kinds of tasks are increasingly accomplished by groups—working both face-to-face and virtually (1–3)—it is becoming ever more important to understand the determinants of group performance. Over the past century, psychologists and others have studied for decades how well groups perform specific tasks (5, 6), they have not attempted to measure group intelligence in the same way individual intelligence is measured—by assessing how well a single group can perform a wide range of different tasks and using that information to predict how that same group will perform other tasks in the future. The goal of the research reported here was to test the hypothesis that groups, like individuals, do have characteristic levels of intelligence, which can be measured and used to predict the groups’ performance on a wide variety of tasks.

Although controversy has surrounded it, the concept of measurable human intelligence is based on a fact that is still as remarkable as it was to Spearman when he first documented it in 1904.

1Carnegie Mellon University, Tepper School of Business, Pittsburgh, PA 15213, USA. 2Union College, Schenectady, NY 12308, USA. 3Massachusetts Institute of Technology (MIT) Center for Collective Intelligence, Cambridge, MA 02142, USA. 4MIT Media Lab, Cambridge, MA 02139, USA. 5MIT Sloan School of Management, Cambridge, MA 02142, USA.
*To whom correspondence should be addressed. E-mail: awoolley@cmu.edu
Applying what we know about learning

How Learning Works: Seven Research-Based Principles for Smart Teaching (Jossey-Bass Higher and Adult Education) [Hardcover]

Susan A. Ambrose (Author), Michael W. Bridges (Author), Michele DiPietro (Author), Marsha C. Lovett (Author), Marie K. Norman (Author), Richard E. Mayer (Foreword)

Eberly Center for Learning
Carnegie Mellon University
What we are working on...

- Develop and integrate task models for salon
- Develop and integrate engagement models in learning
- Simplification of UI
- Custom task based interfaces
- Custom “analytics” modules
Thanks to

- National Science Foundation
- Bill and Melinda Gates Foundation
- Innovation Works
- Heinz Foundation
- Department of Labor
- Carnegie Mellon University
- University of Wisconsin – Milwaukee
- Ithaca College
- Grove City College
- And many others
Thank you

http://classroomsalon.org
registration code: popcity

guna@cs.cmu.edu