



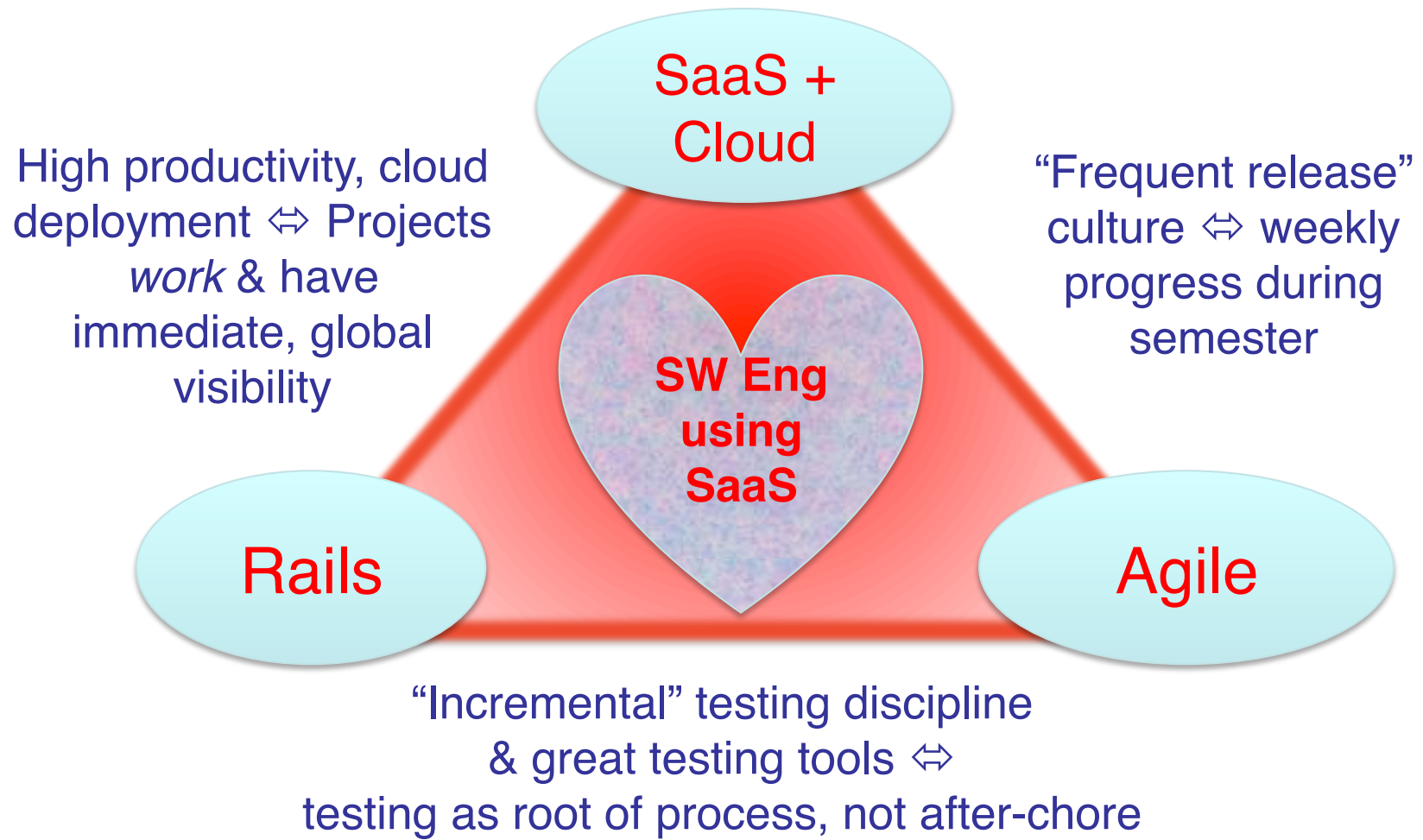
Using the Public Cloud for Software Engineering Education

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Graphic: Google's "Testing on the Toilet" program

Software Engineering for Software-as-a-Service



<http://tinyurl.com/about-saas>



Learn By Doing: Tools > Methodologies

- Software arch., design patterns, coding practices
- Test-first development, unit testing
- Behavior-driven design, integration testing
- Agile, iteration-based project management
- Version management & collaboration skills
- SaaS technologies, deployment & operations
- Ruby & Rails
- RSpec
- Cucumber
- Pivotal Tracker
- Git & GitHub
- EC2, Heroku, SauceLabs CIT



Uses of Public Computing Infrastructure

- Courseware distribution
- Project deployment
- Evaluation (vs. “runs on my computer”)
- Quantitative checking of code metrics (coverage, code/test ratio, quality)
- Project management
- Version control w/instructors observing
- Experiments about horizontal scaling
- (Fall 2012) cloud-based continuous integration testing



Cloud Computing as a Supporting Technology

- Elasticity is great for courses!
 - Lab deadlines, final project demos
 - "Grant" from AWS; ~\$100/student
 - See database fall over: ~200 servers needed
- VM image simplifies courseware distribution
 - TAs prepare image ahead of time
 - Students can install weird cutting-edge SW
- Students get better hardware
 - run VM on cloud vs. locally
 - potentially better tech support

Success stories

PEOPLE DEBATE

Welcome to PeopleDebate – A new debate forum which empowers users to voice their opinions, to establish credibility, and to highlight the most important ideas by using the up and down arrows.

PeopleDebate 2008 Presidential Election Debate Results
John McCain is currently winning the debate with **54%** of the vote!
 Support your candidate - [Click here register your vote!](#)
 Then voice your opinions in our [John McCain versus Barack Obama debate!](#)

Select an option, join a debate below, or [click here for more election resources.](#)

Obama vs. McCain [Create Debate](#) [Hall of Fame](#) [Read FAQ](#) [Contact Us](#)

Recently Active Debates Most Visited

« Previous: **1** 2 3 4 5 6 7 8 9 ... 86 67 Next »

Who should be president - John McCain or Barack Obama?
 Answer: **McCain 54%** Visits: 1561 Posts: 112

Should your taxes go to bail out the millionare or billionare, that got their selfsh selves in this big mess?
 Answer: **No 100%** Visits: 5 Posts: 1

Does Barack Obama have enough experience?
 Answer: **Yes 53%** Visits: 2539 Posts: 12

Why do democrats and republicans always have to bash each other? Should they have at least one debate about what needs to be done for America, and how or what they intend to do?
 Answer: **Yes 100%** Visits: 13 Posts: 1

researchmatch

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Logged in as Armando Fox. Log Out

Research Listings

Search Parameters Department: All Departments Faculty: All Faculty Compensation: Don't care

Search

[More Options] Listings per page: 8 Include ended

Displaying jobs 1 - 8 of 59 in total

Title & Description	Form of Compensation	# Positions
Software for auditing elections (David Wagner) [watch] [apply for this job] Tags: Python credit EECS CS61A CS61B open source computer vision elections Come join the OpenCount project! We are building software to assist with auditing elections. In particular, the team is building open-source s... [read more]		No limit
Research Assistant to Develop Data Acquisition and Analysis Software for New Analytical Instrument (Evan Williams) [watch] [apply for this job] Tags: credit paid Labview (helpful) Chemistry software development data analysis scientific computing signal processing Proficient in c or c++ Matlab (helpful)	\$	1
Security Research on Android (Krstec Asanovic) [watch] [apply for this job] Tags: Java C operating systems computer security EECS User-Centric Security We believe that users should own their data even when they use third-party applications on smart phones and the cloud. Currently, when you u... [read more]	Unspecified	No limit
Computer Vision: Category Recognition (Trevor Darrell) [watch] [apply for this job] Tags: Python EECS computer vision CS280 Matlab credit paid	\$	No limit

We're looking for undergrads to collaborate on research projects to enable object and scene recognition on robots and mobile devices. Depending on experience and level of commitment, tasks would ... [read more]

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find your items

find the owner

Protect your item before it gets lost! Find your item back if it's lost!

Lost and Found News

Notifier is working now.

Notifier is working now. If any newly posted found items' title matches notifiers' keywords, an email will be sent to user's email.

Posted at Thu Jun 19 07:22:03 -0700 2008 by Chaohao Wang

Image upload

Users can upload up to 4 pictures for each of their lost items after posting items.

Global Initiative Commitment

the Bill and Melinda Gates

ESPAÑOL

Search Site

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DONATE NOW!

free downloads

click here

What's New

Read our Weblog

Hesperian recently implemented

CommuterPool

Welcome to **CommuterPool**, a website designed to help save money too. If you own a car, you can easily find passengers are looking for a ride, chances are somebody

How does it work?

- Create an account by clicking "Register"
- Enter your starting point and destination
- Browse among user that shares the same route
- Choose your ride!

LOGIN **BROWSE** **RIDE**

Discover and Post Ride

Street Address

Apartment, suite, unit, etc.

Login

Password

Log in

Register

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Foundation

Action for Health >

Current Projects >

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Hesperian announces our New Spanish-language Web Site: <http://espanol.hesperian.org/>

Now available: *Ayudar a los niños sordos*, the Spanish translation of Helping Children Who Are Deaf.

And coming soon: *Un manual de salud para mujeres con discapacidad*. Visit [Books in Progress](#) to learn more.

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SaaS Changes Demands on Instructional Computing?

- Runs on your laptop or class Un*x account
 - Obscure course project
 - project scrapped when course ends
 - Intra-class teams
 - Courseware: tarball or custom installs
 - Code never leaves UCB
 - Per-student/per-course account
 - Runs in cloud, remote management
 - Your friends can use it
 - Gain customers \Rightarrow app outlives course
 - Teams cross class & UCB boundaries
 - Courseware: VM image
 - Code released open source, résumé builder
 - General, collaboration-enabling tools & facilities
-

Lessons/Takeaways

New opportunity to give students:

- More realistic assignments
- Build, deploy something "real" (outlives class)
- Use same tools they'd use in real life
- Smoother courseware experience
- Challenges
 - Instructor administration not quite there yet
 - Can't install/tweak own kernel
 - Lots of demand; donations won't go on forever
- “Cheaper but faster” than local IT