

The Last Recitation

Wolf Richter

Nothing can compare with
Randy Pausch,



So this is just a collection of
memories from the course
and final thoughts.

Let's take a stroll down
memory lane.

P1: More than you bargained for

- **Skipped 15-410? snicker snicker...**
- Project 1 was intense!

- HTTP/1.1

- SSL

- CGI

- `select()`

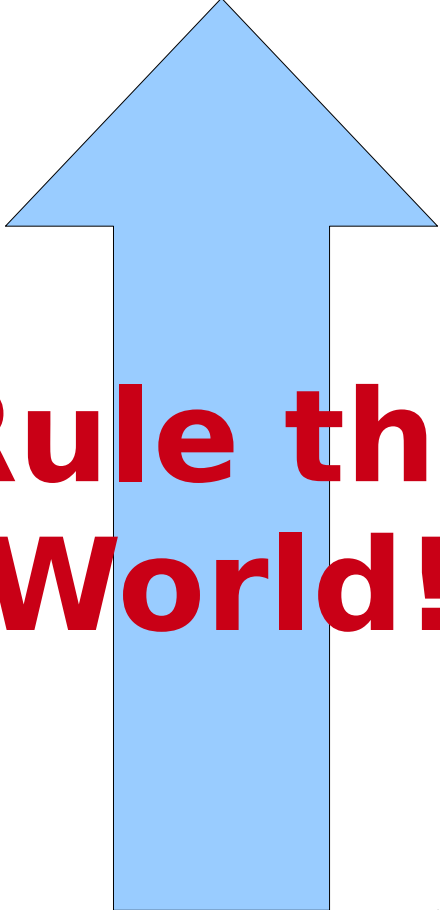
- Python! LPTHW

Yeah, you really
did this.

**A real-world
server.**

P2: The **punishment** continued

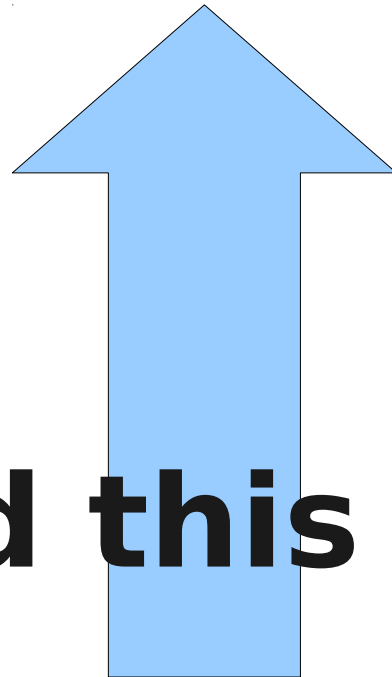
- Little bit of routing
- Usable Content Distribution Network
- EC1 Caching
- EC2 Longest Prefix Matching
- EC3 Pipelining



**Rule the
World!**

P3: **We saw the light...**

- Sprinkle in some reliability
- Mix with congestion control
- Blood, sweat, and tears...
- **Your very own transport protocol!**



Yeah, you did this too ;-)

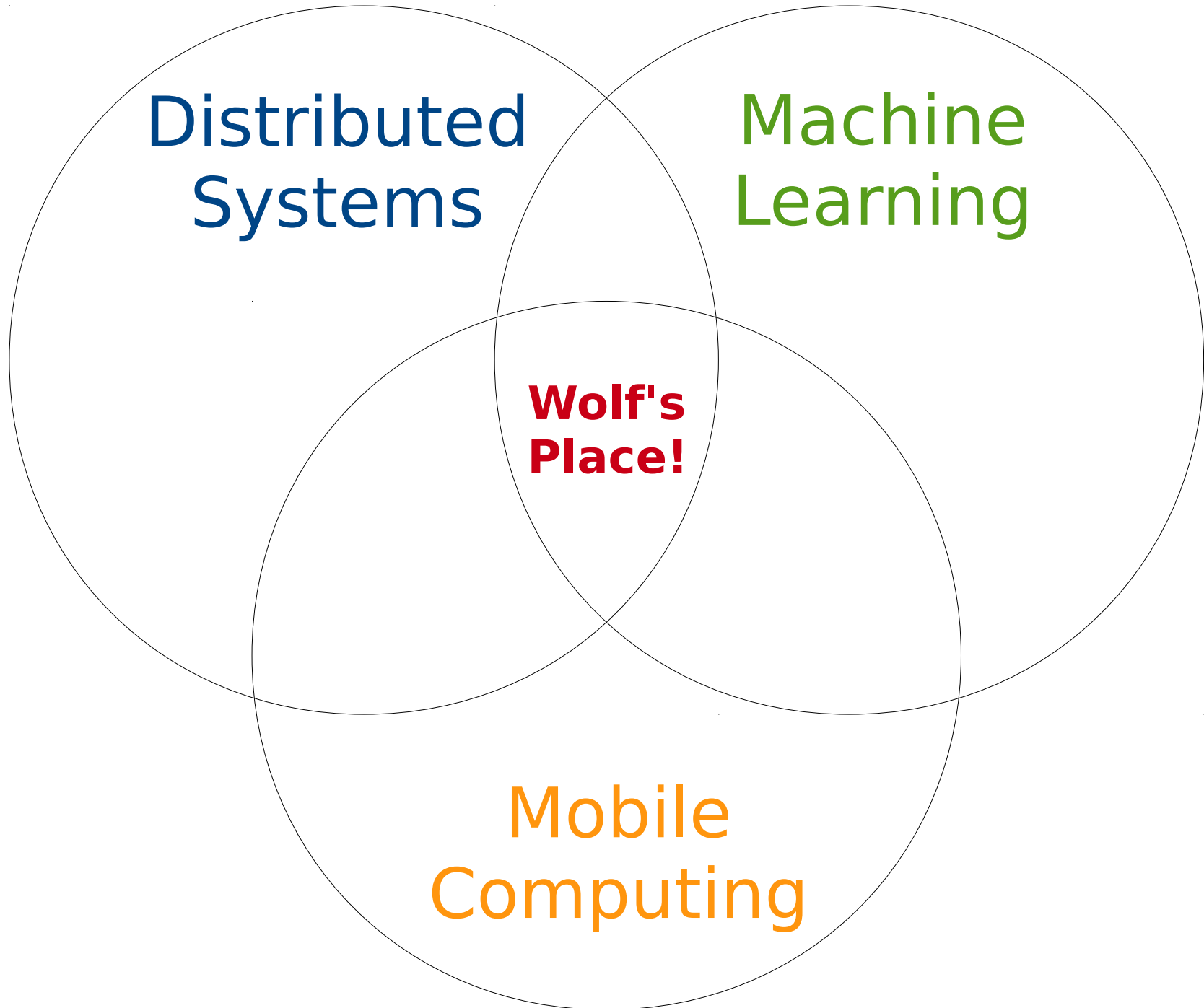
**What exactly did you do
this semester?**

Could we...say...

**visualize all of your
coding?**

gource :-)

Wolf's Home



8 Fallacies

- The network is reliable.
- Latency is zero.
- Bandwidth is infinite.
- The network is secure.
- Topology doesn't change.
- There is one administrator.
- Transport cost is zero.
- The network is homogeneous.

Trust the machine in front of
you and running code.

Not documentation...

Not other people...

Not your brain...

**Make a minimal test case
for everything.**

We'll end with three
quotes and a small
message from me.

**Science is the belief
in the ignorance of
experts.**

– Richard Feynman

You are a computer scientist.

Not a software engineer. → Regular jobs ;-)
Not a tradesman. → Tech support?

Computers are our tools. Not devices we're expected to troubleshoot.

Just like telescopes are tools for astronomers and astrophysicists.

You can know the name of a bird in all the languages of the world, but when you're finished, you'll know absolutely nothing whatever about the bird... So let's look at the bird and see what it's doing—that's what counts. I learned very early the difference between knowing the name of something and knowing something.

– Richard Feynman

Remember: Don't
trust anyone or
anything else.

**Observe things for
yourself.**

"It is not the critic who counts; not the man who points out how the strong man stumbles, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood; who strives valiantly; who errs, and comes short again and again, because there is no effort without error and shortcoming; but who does actually strive to do the deeds; who knows the great enthusiasms, the great devotions; who spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement, and who at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who know neither victory nor defeat."

– Theodore Roosevelt (Paris Sorbonne, 1910)

tl;dr

Remember: Learn by doing
and actually figuring things
out on your own.

**Respect actions, not
words.**

Many recitations ago, I told
you that you would

**be held to very high
standards.**

Unfortunately, this means
that TAs, especially me,

**must hold ourselves to
even higher standards.**

I hope we have followed through.

Because you have.

Merry Christmas!

`git clone git://github.com/theonewolf/15-441-Recitation-Sessions.git`