Network Programming Languages

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Introductions

About Me

Robert Soulé
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Research on networks, languages, distributed systems, and databases

Brown

1995–1999 BA CS, Art-Semiotics

NYU

2004–2006 MS CS

2006–2012 PhD CS

IBM

2008–2011

Data Intensive Systems group

Cornell

2012–2014

Postdoc

Lugano

2014-present

Assistant

Professor

About You

This Course

Overview

- Seminar-style, Ph.D. level course
- Goals
  - Learn about research at the intersection of PL and Networking
  - Develop your (technical) communication skills
- Methodology
  - Reading, reviewing, and discussing papers
  - Lead discussions on research topics
  - Small programming exercises to get “hands-on” experience

Papers

Process

- Everyone reads the papers, answers the following:
  - What is the problem and why does it matter?
  - What is the solution, and how is it new or different?
  - What are the contributions and limitations
- Write a one paragraph review (per paper)
  - One sentence summary
  - Key strengths and weaknesses
  - Anything else important to you

Process (continued)

- Submit the review by email (by 8am on day of class)
  - usi-netpl-2015sp@googlegroups.com
  - Give me a hard copy if you want feedback
- Read other students' reviews
- Come prepared to participate in class discussion

Process (continued)

- One person per week:
  - Prepares summary slides
  - Presents the papers to the class
  - Leads the discussion on the topic

Hand-On Experience

Process

- Use Mininet to simulate networks
- Use Frenetic to implement network functionality
  - *This is a research project, there will be bumps*
- Goal is to get experience and learn, not to evaluate
  - If there is something cool you want to look at, let's do it!

Grading

- Reviews will get a 0, 1, or 2. No extensions.
  - 1 is the normal case.
- Presentations will get a 0, 1, or 2.
  - 1 is the normal case.
- Life happens.
  - Every person may miss 1 set of reviews, no questions asked.

Topics

- Networking Basics
- Software-Defined Networks
- Distributed Protocols
- Verification
- Open to other ideas

Details

- Web site:
  - http://www.inf.usi.ch/faculty/soule/teaching/2015-spring/npl/index.html
- Mailing list:
  - usi-netpl-2015sp@googlegroups.com