Course Information
CS 208: Canon of Computer Science
Prof. Vladlen Koltun, Stanford University, Spring 2010

Course description
Analysis and discussion of seminal works in computer science. Emphasis on works that changed the course of computing and continue to this day to provoke and stimulate. We will study foundational contributions that are at the core of personal computing, the Web, modern AI, computer system design, computer networking, computer graphics, modern cryptography, and more.

Through immersion in original literature, we can more deeply comprehend the present state of computing, its origins, its underlying assumptions, and its major open questions. In connecting students with the ideas that shaped computer science, the course aims to instill lasting inspiration and a deep understanding of major trends in the field.

Class time and location
• Time: Mon/Wed, 2:15-3:30pm
• Location: Jordan Hall, room 420-040

Staff
• Instructor: Prof. Vladlen Koltun
  o Office Hours: Wed 4-6pm, Gates 374 (except 3/31)
  o Contact: vladlen@stanford.edu (but please email the staff list except in unusual circumstances that require private communication)

• Teaching assistant: Siddhartha Chaudhuri
  o Office hours: Thu 2-4pm, Gates 396
  o Contact: sidch@cs.stanford.edu (but please email the staff list except in unusual circumstances that require private communication)

Contact
Contact the course staff at cs208-spro910-staff@lists.stanford.edu

Grading
• Class discussions (20%). The course is primarily discussion-based and participation in class discussions is an important part of the course experience. Through
discussion and analysis of the material in class, you will acquire deeper understanding. The instructor will guide the discussion, but you must read and understand the papers before each lecture and come prepared with stimulating questions and commentary.

- **Critiques (20%).** Before each class session, every student is required to submit a short (half-page to a page) critique of each of the required readings for the session. Critiques are due by 7:00am the day of the class. The submission system closes at 7:00am sharp. In the critique, do not summarize the paper. Instead, point out what thoughts and ideas it inspires in you. Provide commentary. Point out something non-trivial about the paper, something that is not already described in the text itself. Perhaps some interesting connections with other papers, other areas of computer science, or science and technology more broadly. Perhaps some reflections on how the content of the paper withstood the test of time, how it fares in light of what actually happened after the paper appeared. Perhaps some criticisms of the paper. Perhaps some ideas it inspires, something you would like to create after reading this paper.

- **Discussion moderation and scribing (10%).** Every student will be responsible for one class session. The primary responsibility is to produce a written 2-4 page summary of the class discussion, which will serve as a readable archival record of the class. The summary should focus on the main issues that came up during the discussion and the various aspects of these issues that were raised. To the extent possible, the summary should be organized around the important high-level themes that were identified in the critiques and in the class discussion.

  The moderator should also prepare to take a proactive role in stimulating the class discussion. While all class participants share responsibility for the vitality of the discussion, the moderator should review everybody's critiques before class, bring a list of stimulating points to class, remain hyper-attentive throughout the discussion, and, if the discussion loses energy, be prepared to step in and lead it in a more fruitful direction.

- **Online discussions (10%).** After the class discussion, participants will post their summaries, impressions, and l'esprit de l'escalier to a dedicated online discussion forum for that session. This forum will continue the class discussion online.

- **Course projects (40%).** Students will complete two projects individually. The aim of the projects is to round off the course experience with additional material that is instructive and stimulating. The first project is themed “How did we get here?” The second project is devoted to “Where are we going?” More details on these are given in the next section.

**Project 1: How did we get here?**

In this project, students will read book-length material that rounds off the readings covered in class. Each student will write a 4-8 page report commenting on the reading.
The content of the comments should be of the same nature as the critiques (see above), but longer, reflecting the greater length of the material and the longer time span allotted to it. The students will also prepare a short (5-10 minutes) presentation on the material, given during the May 10 and May 12 sessions.

Here are some options for Project 1 material. The students are encouraged to propose their own options, which will be evaluated by the instructor.

- Norbert Wiener, *Cybernetics* (1948)
- Propose a reading that should be on this list.

**Project 2: Where are we going?**

In this project, students will identify and explore a domain in which computing can make revolutionary advances in the next 20 years. Students will submit proposals mid-quarter and conduct the research in the second half of the quarter. Students will submit a 4-8 page report presenting the domain, the existing literature, and their vision for the evolution of the field. Each project will be accompanied by a 5-minute presentation on June 2.