Paper

Yip, Kenneth, and Gerald Jay Sussman. "Sparse Representations for Fast, One-Shot Learning." Technical Report 1633, MIT Artificial Intelligence Laboratory, May 1998. Also known as "A computational Model for the Acquisition and Use of Phonological Knowledge."

Assignment

You have decided you are so thrilled by 6.xxx, you will write a textbook covering the material. You arrange an appointment with Professor Winston, during which you go into such matters as dealing with publishers, handling reviewers, structuring royalty rates, and handling international sales. Winston mutters something about maybe talking about the same sort of stuff in class at some point.

Then, you turn to the writing of the book itself and Winston explains that it is extremely important to do a good job on the chapter openings. Unfortunately, your time is up just when he is about to explain the standard components in his chapter-opening template.

On a total of one side of one sheet of paper, using 10 pt type or larger, with standard interline spacing and margins, respond to all the following.

- Reverse engineer the sample chapter openings and exhibit the slots that seem to constitute Winston's chapter-opening frame, where "slot" and "frame" are used in the 6.034 sense, whatever that means. Consult with a colleague who has taken the right version of 6.034 if you are clueless. Add any other slots that seem especially important to you.
- Write an introduction to a chapter on Yip and Sussman's work, as reported in their paper, demonstrating use of whatever frame slots seem appropriate for the material.

Then, be prepared to discuss issues such as the following in class:

- How is the Yip/Sussman approach to AI similar to and different from that of Brooks?
- Which parts of the Yip/Sussman system are most and least believable?
- Yip/Sussman argue that sparse spaces make learning possible; are their any other virtues to sparse spaces?

6.803/6.833 The Human Intelligence Enterprise
Prof. Patrick H. Winston

Textbook Chapter Opening
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