The Importance of Writing Code

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My teaching experience

Adjunct professor at Stanford for a dozen years. Teaching the undergrad course for Dave Cheriton.

Creating Stanford's Graduate networking course.

Stanford is on the quarter system. 125 students. 50 students.

A bit of teaching at Berkeley and Harvard.

Most of my teaching these days is mentoring new PhDs when they arrive at BBN.

Teaching the undergrad course for Dave Cheriton.
Why Have Students Write Code?

The best way to teach advanced concepts that I know is to force students to realize those concepts in software. Students rapidly learn what they don’t know. In most cases, they go on to learn it. And, in an undergraduate course, it gives them a marketable skill.

Especially as they claim you taught them something useful... might as well really do it. Especially as they do go on to learn it.

When I arrived at BBN, the advice there was that if I really wanted to understand network protocols I had to implement a reliable one such as TCP. And, in an undergraduate course, it gives them a marketable skill.

To my mind, always a goal in undergraduate course. In most cases, they go on to learn it.

Side note: When I arrived at BBN, the advice there was that if I really really did it...
Hazards of Code

Your students turn out not to know how to program…

There’s a fine line between pushing hard enough to teach them and driving them to despair.

If you don’t get it right in class, they’ll find out…

Getting competent graders is painful

Crafting your grading scheme can help

Log scale

I lost 50% of my class in the last two weeks of the course, first time I taught

Drive them hard enough that “design by Emacs” fails