

What I Want to Be When I Grow Up: The Next Three Years

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25 March 2015

Hacker News, today: I can't praise HtDP enough. What [it] did was sufficient to fundamentally change me as a programmer. ... know that I am sincerely grateful for all of your work. Without the software and materials that you... labored to create – and ... provide freely – I might not be a professional programmer today.

Thesis My teaching often inspires research projects, and my research projects tend to influence my teaching. This thesis guides my approach to academia.

Research For the past 20 years, I have pursued the vision of a programming language that narrows the gap between problem solving and programming. This pursuit includes research on systematic program design (as problem solving); on programming languages that facilitate the creation of problem-specific languages; and on a full-spectrum language so that programmers can move from prototype to “hardened” product in one comprehensive framework.

The Racket Manifesto.
In *SNAPL* 2015.

For the next three years, I plan on focusing on this “hardening” aspect of the agenda, also known as the “soft typing” project. I have recruited several PhD students who are interested in this agenda, and I have submitted two NSF proposals (one large, one medium) and an ONR white paper to finance it all. While I am the sole author, I have several co-PIs, including Jan V., who coined the phrase “hardening” for this project, and Olin S. (plus six others).

Teaching I am the intellectual architect of the core programming undergraduate curriculum (Fundamentals I–IV plus Logic). I intend to help maintain and improve it. What is missing, is a course focused on program design in a concurrent-distributed setting, which is why I am trying to recruit Heather M.

I intend to finish *How to Design Programs* (2) this year; it's a 10-year project.

The new *Rust* course is an experiment in exposing students to cutting-edge research developments from industry with potential for future collaborations.

At the PhD level, I wish to collaborate with Amal A. to improve iPPL. If possible, I would also like to teach “History” again; it has been five years.

Service I serve where I see a need: integrate new faculty via research and teaching collaborations, mentor all PhD students in our lab, checking on our instructors (retaining the good ones, recruiting new ones) spot problems with courses, find faculty that expand our critical teaching mission, and make myself available where needed (but not chairing anything).