



## AI Profiles: An Interview with Jim Kurose

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### Abstract

This column is the second in a new series profiling senior AI researchers. This month focuses on Jim Kurose.

### Introduction

Our second profile for the interview series is Jim Kurose, Assistant Director of the National Science Foundation (NSF) for the Computer and Information Science and Engineering (CISE). Please note that NSF is hiring and would love to have you apply!

### Bio



Figure 1: Jim Kurose

Dr. Jim Kurose is an Assistant Director of the National Science Foundation (NSF), where he leads the Directorate for Computer and Information Science and Engineering (CISE) in its mission to support fundamental CISE

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research, education and transformative advances in cyberinfrastructure across the nation. He is currently a Distinguished Professor in the College of Information and Computer Sciences at the University of Massachusetts Amherst, where he has been a faculty member since receiving his PhD in Computer Science from Columbia University. His research area is computer networking, but he did manage to pass a PhD qualifying exam in AI. He is proud to have received a number of research, teaching and service awards over the years, and is particularly proud of the many students with whom he's been so fortunate to work. With Keith Ross, he is the author of the widely adopted textbook *Computer Networking: a Top Down Approach*. Jim is a Fellow of the ACM and IEEE.

### Getting to know Jim Kurose

#### How did you become interested in CS?

My undergraduate degree is in Physics (from Wesleyan University), which didn't have a program in CS at the time. But I took the only two CS courses offered—and loved them both; I worked in the computing center, and had a student job that involved analyzing the various plays run by Wesleyan's football opponents (definitely “small data”!). Probably most importantly, I did some Monte Carlo modeling that complemented the experimental part of my undergrad thesis. I loved physics, but I also had a sense that I'd love computer science, and so I went to grad school expecting to get a MS degree in CS. There, I fell in love with CS research when I met a couple of great faculty who became my PhD advisors.

#### What was your most difficult professional decision and why?

The hardest decisions are always the ones that affect other people. When there are decisions that run contrary to what a person wants (e.g., passing a PhD qualifying exam), you re-

ally need to believe that the decision is in that person's best interests. The people we work with are always so talented that the challenge is really one of helping find the environment in which a given individual will thrive, be happy, and grow.

**What professional achievement are you most proud of?**

Without a doubt—the students I've taught and mentored; that includes nearly 30 PhD students, and many, many MS and undergrad students. It's really a privilege to have a job that can impact others. There's nothing that makes a day (or a week!) like getting a note from a former student and hearing that you've helped make a difference in that person's life. In second place is the undergraduate textbook (*Computer Networking, a Top-Down Approach*) that I've written with Keith Ross—we wrote that because we both love to write and teach, and have been incredibly pleased (and perhaps a bit shocked!) to see how it has been adopted at so many universities around the world. I am also very proud and honored to be able to serve the CS community in my current position as Assistant Director at the National Science Foundation, where I lead the Directorate for Computer and Information Science and Engineering.

**What do you wish you had known as a Ph.D. student or early researcher?**

Hey—great question! I've given a talk on exactly that topic: "[Ten pieces of advice I wished my advisor had told me.](#)" I've given this talk at a bunch of student workshops in my research area over the years. Among my favorites in that list are learning how to communicate (write, speak, and tell the narrative of your work), finding role models, and studying broadly.

**What would you want for your career if you couldn't do CS?**

Impossible to say! I think there's a surprising degree of randomness in where we end up, and how we get there. As the saying goes, "What a long strange trip it's been!" As I mentioned, I didn't go to grad school planning to get a PhD—but my grad school expe-

rience turned out to be phenomenal. Nor did I really choose grad school from a particularly career-oriented point-of-view; I just wanted to be where my girlfriend (and now wife) wanted to be. Both turned out great, but the lesson, I think, is to be open to opportunities and to follow your passion. Sounds a bit trite, perhaps, but definitely true.

**What is a "typical" day like for you?**

No two days are alike in my job at NSF. I spend lots of time working with the amazing CISE staff (program directors, division directors, and administrative team) on both current and future programs; I spend a lot of time interacting with staff from the other directorates at NSF—a real treat as well; and I also spend a good deal of time working with other Federal agencies. Last, I really enjoy spending time *in* the CS community, at meetings and visiting campuses and hearing about the amazing things going on, as well as individual and institutional hopes, aspirations, and concerns.

**What is the most interesting project you are currently involved with?**

Pretty much all of the aspects of my job at NSF. Let me add that CISE is always looking for smart, dedicated and talented folks from the research community who might be interested in serving a rotation as an NSF/CISE Program Director. I'd encourage anyone interested to contact the relevant CISE division director or me—we'll be happy to tell you more about the opportunities.

**How do you balance being involved in so many different aspects of the CS community?**

We all depend on so many other people. As students, we depend on our teachers, staff, mentors and other students; as faculty, we depend on our students, colleagues and collaborators; in academic leadership, we depend on the people with whom we work to help make things happen. For these many activities to be successful we need to rely on other people, and be reliable to those with whom we work; we really do achieve both more and better things by working together. At NSF, it's been

great to work with Lynne Parker, NSF/CISE Division Director for Information and Intelligent Systems, and her team, who provide NSF's technical vision, leadership and management of programs in AI and Information and Intelligent Systems more broadly.

**What is your favorite CS or AI-related movie or book and why?**

I can still remember being completely blown away as a kid when I saw *2001: A Space Odyssey*. It was visually stunning, had the HAL 9000 computer (of course, I'd never even seen a computer then), and was wildly inscrutable to a twelve-year-old. For CS/AI-related books, my favorites are anything written by Isaac Asimov, and *Snowcrash* by Neal Stephenson. Beyond science fiction, I've just finished [The Second Machine Age: Work, Progress and Prosperity in a Time of Brilliant Technologies](#) by Erik Brynjolfsson and Andrew McAfee. All of these books speak to the relationship between humans and technology—a topic of increasing importance for everyone.



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