

# Software programmers hit the law books

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## STANFORD, Calif.--It's not every computer science class that opens with a poem.

But on a recent June day at Stanford University, khaki-clad senior Jeff Keltner stood before his classmates, cleared his throat, and recited verse about a Hollywood-led crackdown on technology that can transfer digital books to different devices. The final lines went something like this (to the beat of Dr. Seuss' "Green Eggs and Ham"):

"I want to read this book I bought,  
but people tell me I ought not.  
They say I will be locked away  
because of the D-M-C-A."

Keltner, a computer science major, is enrolled in Computer Science 401, a policy research seminar taught by Barbara Simons and Edward Felten, a programmer who last year backed away from a speech about his work amid legal threats from Hollywood.

The senior's poem—a joking commentary on the Digital Millennium Copyright Act's (DMCA) effects on programmers—is one of the unconventional ways the computer science community is expressing its bewilderment at Capitol Hill's foray into their field.

A few years ago, the confluence of policy and technology seemed something for wonks far away in Washington to ponder. A preview of the clash was glimpsed in the late 1990s, when a handful of geeks successfully battled the Clinton administration to ease export restrictions on encryption technology.

Now a series of legal actions has brought the debate into the labs, homes and offices of millions of programmers, prompting some of them to emerge from their cubicles and take action. This time, as they say, it's personal.

"I really think the profession is on the front lines," said Simons, a well-known computer scientist and longtime IBM researcher who has served as president of the Association for Computing Machinery. "If we lose, one of the things we lose is the freedom to speak out and do research."

## New coursework

These days, programmers are challenging apolitical geek stereotypes by marching, protesting and even reconsidering job offers as the worlds of computing and government increasingly collide. In the past year, they've watched Russian programmer Dmitry Sklyarov land in jail after coming to the United States to talk about his work, and they've seen Felten and his colleagues spooked into silence in the face of legal threats.

Whether they want to or not, geeks are getting a crash course in copyright law—and many worry they could be targets of the next crackdown.

At the heart of the conflict is the DMCA, a law passed in 1998 designed to bring copyright into the digital age and prevent piracy by outlawing certain technology. However, some argue the law prohibits actions that had previously been legal, such as technical research and reverse engineering.

Increasingly, Hollywood has been successfully brandishing the law to crack down on new technology it fears will aid copyright theft. Building on those victories, the entertainment industry is continuing to push for new anti-piracy regulations, including one that would require consumer-electronics makers to put anti-copying technology in their products.

In a sense, Simons' and Felten's students are being groomed to tread successfully where geeks before them have stumbled: the policy arena.

Class assignments include writing jargon-free papers on technical issues so lawmakers can understand

them and conducting a project that investigates the social and political implications of technology. They've chosen to examine topics such as national ID cards, cookies, e-books, domain names and deep linking.

"You just can't help getting drawn in," said Ruchika Agrawal, a candidate for a master's degree in computer science and one of the students in the class. Agrawal embarked on Stanford's computer science program with plans to either pursue a Ph.D. and continue with research or go to law school.

Last year, a speech by Felten sealed her fate. The professor, who was then visiting from Princeton University, spoke of his decision to back away from giving a talk on his programming research after music industry lawyers warned him his actions might violate the DMCA. He warned programmers to beware of similar action.

"That changed me," Agrawal said. "I thought: D.C. needs some expertise before they pass these laws." Like several of her classmates, Agrawal will head to law school when she graduates instead of pursuing a career path typical for computer scientists. But first, she will take her technical skills to Washington this fall to work for the Electronic Privacy Information Council, a privacy watchdog group.

## Entering the political fray

Computer students across the country are boning up on legislation and lawsuits as policy issues become ever more entwined with their profession. The list of mascots is growing as schools fight for their right to code. Princeton and Stanford have Felten. Carnegie Mellon University has Tom Murphy, a graduate student under legal attack from design companies, which fear his font-sharing program lead to widespread pirating of their copyrighted typefaces.

But it's not just students who are entering the fray. Working programmers are waking up and worrying about policies' effects on their careers. The seminal moment for many in the corporate world was last summer's arrest of Sklyarov, the Russian programmer who was jailed for giving a speech about technology that could be used to crack Adobe Systems' e-books. U.S. prosecutors charged him with offering technology that could be used to violate copyrights, an action illegal under the DMCA.

The incident prompted many programmers to ask the question that until then had been merely theoretical: Could they, too, land behind bars because of their programming work? Then tech jocks from Marin to Minneapolis got mad. They picked up placards and picketed Adobe headquarters, local Department of Justice offices, and anywhere else they could think of, urging prosecutors to stop targeting a man who was just doing his job.

Adobe eventually bowed to the pressure and asked the government to drop its charges against Sklyarov, but it has maintained its support for the remaining case against his employer, ElcomSoft.

And despite backing off its pursuit of Sklyarov, Adobe still may be experiencing a fallout—at least among the geeks who can afford to be picky about employment in this economy.

Mike Crawford, a software consultant and former Apple Computer engineer, had just applied to Adobe when Sklyarov was arrested. "I felt real sick about it, and I decided it would be wrong to work at Adobe," he said.

Another programmer, Christopher Maden of San Francisco, said he did some sniffing around about the company's position after being approached by an Adobe recruiter. "I was considerably conflicted about whether to proceed," he said. Maden ended up not being qualified for the job the company was hoping to fill, but he said even if he had been, "I would've had to tell them no." Adobe said its employees do not have to agree with its corporate position.

"Adobe respects people's beliefs and opinions," said Diane Schlageter, Adobe's director of staffing. "The

company understands that everyone will not always agree with the corporate position. Employment at Adobe is not contingent upon supporting the company's position as we believe each employee's unique opinion fosters a workplace rich in ideas."

Nevertheless, a few Adobe executives have quietly dropped hints that they are working to improve the company's image among programmers. Publicly, the company defends its decision to continue the case against ElcomSoft.

"Our customers are strongly concerned about piracy and the protection of digital content. The intellectual property community has rallied strongly around the DMCA and the government's actions," the company says on a site devoted to the ElcomSoft issue.

## A matter of law

Tim Neu, a programmer who participated in "Free Dmitry" protests in the Minneapolis area, said that although Adobe generated some ill will with its decision, "A lot of people are more mad at the law than they are at Adobe," he said.

Neu said he first began paying attention to tech-related legal issues two years ago, when the movie studios sued online hacker magazine 2600, alleging the publication infringed copyrights by posting and linking to code that can be used to crack protections on DVDs. Many famous computer scientists—including open-source guru Richard Stallman and security expert Eugene Spafford—lined up behind 2600, arguing the suit would chill technical research. Nevertheless, judges have repeatedly sided with Hollywood in the case and ordered the program removed from the Web.

Felten, who is now on sabbatical from Princeton to teach the Stanford class, said computer scientists increasingly are being punished for activities that would have been considered unexceptional 10 years ago. "Computer scientists are getting much more aware and much more active in what most of them view as an attempt to protect the profession," he said.

However, he said the industry has its work cut out for it in Washington. For one thing, programmers must learn to speak the language of lawmakers—one of the goals of his and Simons' class.

What's more, although high-profile executives from Intel and Gateway are starting to speak out on the matter at congressional hearings, the tech industry still doesn't have the same clout on capital hill as Hollywood executives such as Jack Valenti, CEO of the Motion Picture Association of America, who had served in the Johnson-era White House. "There is no one person who speaks for the industry the way that Valenti does," Felten said.

Some lawmakers, such as Rep. Rick Boucher, D-Va., say they're listening to programmers, but so far there hasn't been any significant legislative action that supports that sentiment.

But perhaps the biggest hurdle is convincing lawmakers that programmers are operating in an era of technical censorship. After all, it's difficult to pinpoint the number of projects never launched because computer scientist feared their research would land them in jail.

"The loss is in things that would have happened but don't happen," Felten said. "People are not starting certain projects. It's in the choices they don't make."

Even so, Felten is optimistic that up-and-coming programmers will grab a seat at the table in Washington.

"I think this newer generation will be more interested and more savvy about these issues," he said. "That will make a big difference."