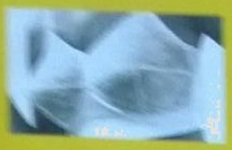

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## Sexism Bytes

FIXING CODE IN THE WORKPLACE

## Women Who Kill in Self-Defence

# Fixing Code

## HOW WOMEN ARE CHANGING SEXISM IN THE WORKPLACE

BY KELSEY ROLFE

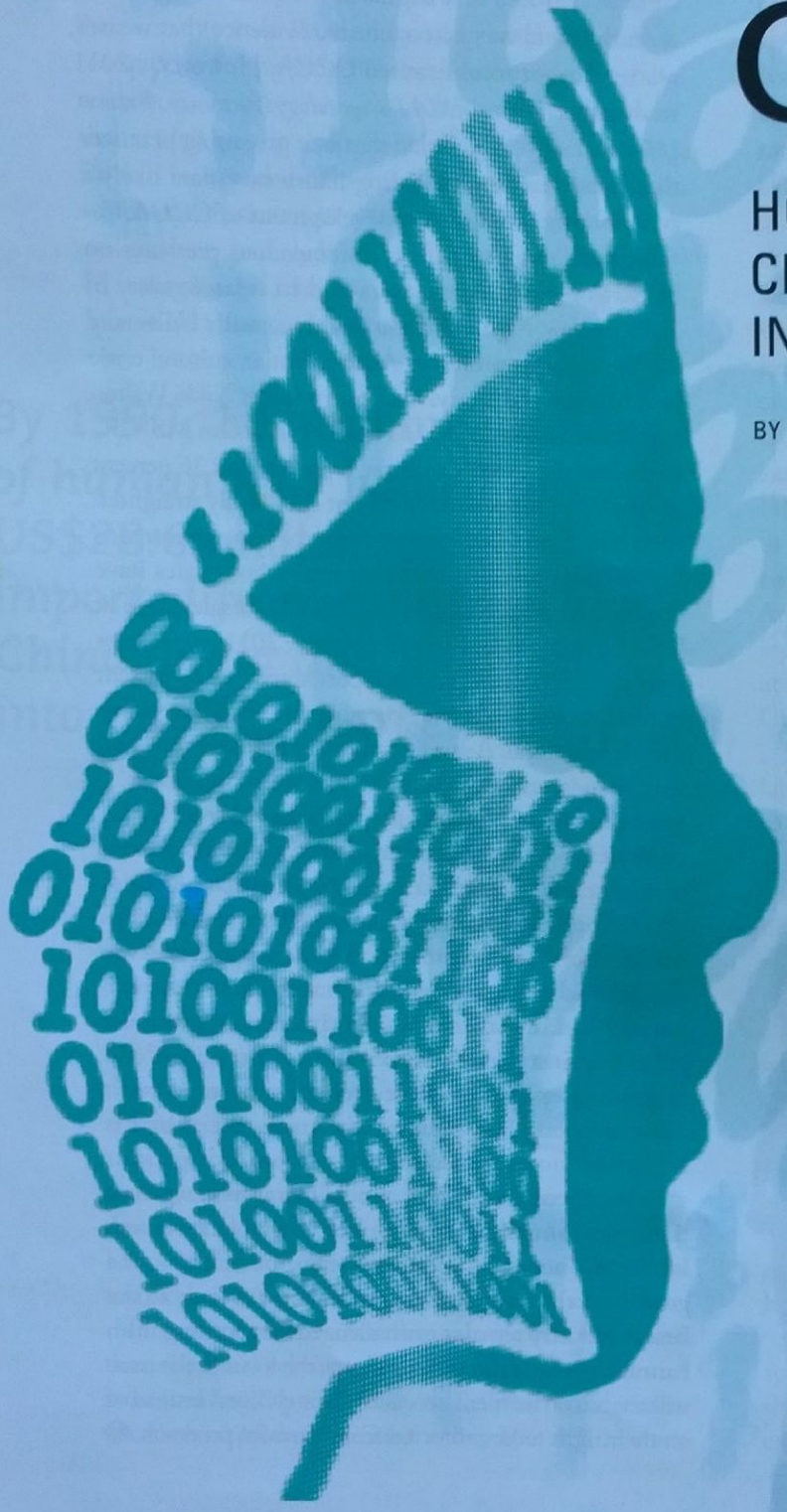

Image: iStock

Anahita Sadri was working through her lunch hour one day, in the middle of the open-concept offices of the international IT company in the quiet, business-only part of Mississauga where she worked. Behind and in front of her, rows of computers stretched out across the room's left wall, where all the programmers sat.

When her co-worker first approached, she gave him a smile. It fell off her face, however, when he said, "You know, I'm surprised that you're a woman and you're doing programming." Shock came first; she didn't know how to respond and simply said nothing. Next was confusion. The 36-year-old wondered if maybe her co-worker was trying to compliment her. Then she thought back on their past interactions.

Sadri's co-worker was a tester who decided whether the products from the company's developers were client-ready. Lately, he'd been making Sadri's job hell by testing work from her male team members but not from her. As a programmer, she worked on as many as 20 different projects a month, so having her work refused by the tester stalled her other projects.

"Sometimes," she recalled four years after the incident, "he would just send it back without even trying to test what I had done."

Today, Sadri is one of four female programmers in a group of 50—a fact that should be stunning, but isn't. According to recent data from the Information and Communication Technology Council, women make up just 24 percent of the advanced technology sectors workforce in Canada. In the core technology roles, including programmers like Sadri, the number drops to 17 percent. For women going into computer programming, being one of the only females in the room is a virtual guarantee.

Sadri's experience with sexism is unfortunately common. In a 2011 study, three University of Virginia researchers interviewed 101 women in graduate computer programming studies about their experiences as programmers. Almost all described instances of sexism and discriminatory treatment by their male peers.

The survey respondents first reacted to the incidents by ignoring the offending behaviour. Many of the women said that in response to such incidents, they minimized their femininity or attempted to act like one of the guys so that they wouldn't stand out. It's an observation that holds true with many women working in the industry as they try to cope with sexist attitudes.

Other women in the industry are developing ways to push back against the discrimination.

Sadri grew up in Tehran and attended Iran's prestigious Shahid Beheshti University for computer science. "Because I was the only girl, they didn't expect me to be very smart," she says. "Even in university, I was the only one in a group of 50 guys."

Sadri often stayed up until 4 a.m. doing group projects by herself. "All of my team members, they weren't as passionate as I was."

She loved her studies but felt isolated because she was a woman. Instead of relying on study groups for assistance, like her male counterparts, she often went to her professors for help. But being largely friendless didn't deter her.

Sadri graduated and got a job as a developer at a transportation company, where she was the only woman and her co-workers made doing her job nearly impossible. She was shut out of important decisions, big projects and many meetings. Her proposals were repeatedly shot down. "In so many cases, I was even scared to give my ideas because I was looked down on."

*Anahita Sadri, a programmer-analyst, eventually called out her co-worker's sexism and got an apology.*

After five years of being shut out, Sadri caught a break. The company's management changed and the new CEO supported her ideas and treated her with respect. But the struggle to continually prove herself was tiring and was a factor in her decision to emigrate to Canada when she was 29.

The incident with her colleague in Canada was a return to the discrimination she'd faced in Iran. But this time she turned to her boss for help. He called a meeting with Sadri, her co-worker, and her co-worker's boss. Within 10 minutes, her co-worker apologized—albeit grudgingly.

She could have left. Instead she kept pushing. "I had to," she says. "It's my career; it's what I've studied for. I wanted to do the best in my job to show people that I can, so I have something to show for myself."

In the fifth-floor office where Sadri works, clusters of men congregate around the room. It's easy to forget that the person recognized as the world's first

computer programmer was, in fact, a woman. In 1843, Ada Lovelace produced a detailed translation of a paper written about English mathematician Charles Babbage's Analytical Engine, a proposed clockwork counting machine that would perform mathematical functions. Lovelace added a sequence of operations that would allow the engine to solve certain mathematical problems. This sequence is known as the first algorithm. She was a century too early to test it on a computer, but Lovelace's creation cemented her place in the history books.

A hundred years later, at the height of the Second World War, members of the Women's Royal Navy Service were picked to operate 10 massive Colossus computers that were built at the code-breaking facility at Bletchley Park in England. Across the ocean, a team of six female programmers staffed the first fully electronic computer in the United States, the ENIAC, created in 1945 to do ballistics calculations for the U.S. Army.

*Heather Payne, Founder of Ladies Learning Code, offers night classes and full courses in coding.*

A 1967 *Cosmopolitan* magazine article, titled "The Computer Girls," gave an indication of women's role in computing at the time. According to writer Lois Mandel, there were already 20,000 women working in computer programming, and there was a need for just as many more. Multiple papers and statistics suggest the percentage of women in programming was at its highest between the 1960s and the early 1980s. But in the following years that number declined sharply.

It took three days to break Rebecca Putinski. On her first co-op at a Toronto mobile developer, she found herself working with another student, for whom she constantly covered. She fixed his bugs, repaired his broken code, and at times even did his work for him. But if his word were believed, she was the least talented programmer in the company. She shouldn't have been there. She can't code. He was saving her ass. And he certainly let her know it.

After the relentless torment, she told the guys in HR, and they vowed to handle it. She took a personal day. When she returned, the fellow student acted professionally, and at the end of the co-op, he apologized. The incident stuck with her.

Putinski, 24, got her start with programming when she was 10. Curious about how websites functioned, she started learning HTML and CSS by reading website source code and breaking it down bit by bit. Two years later, she was making websites for U.S. clients.

In high school she taught herself C++, Turing and Python. She hung out with the "nerd club" at lunch because she was made fun of for her computer savvy, and in her computer science course, her classmates occasionally stole her chair and keyboard and defaced her computer. "Only me," she recalls with a bit of a laugh. "No one else, 'cause I'm the girl in the class."

At the University of Waterloo, Putinski found the theoretical math classes too abstract for her and gravitated toward hands-on programming courses. It was a stream that often made her the only girl in her class, but she wasn't teased or excluded. But at her second co-op at Blackberry, her boss was unsupportive and barely gave her any work. When she made a system for secure document sharing that was widely used across the company, he expressed surprise. "It was terrible," she says. "So I got out of there."

Putinski's experiences with sexism have been small outliers in an industry that has otherwise been friendly to her. She still gets the less-than-inventive jokes, but says they don't bother her. "My friend in university, we just joke about how we're in the kitchen, but we can also program better than the boys, who can't even cook," she says with a laugh. Her sense of humour is what allows her to let petty insults roll off her back. "Taking it in good stride helps," she says. "I've kinda done that as a coping mechanism."

In the late '80s and early '90s, programming went through a period of masculinization that was closely associated with the development of computer science university courses and certification programs. Turning programming into a job seen as skilled labour and promoting the ideal programmer as possessing masculine character traits ultimately disadvantaged women.

An article in the *Chronicle of Higher Education* reported that, in 2010, women in the U.S. were earning only 18 percent of computer science bachelor's degrees. In Canada, a Statistics Canada report indicated that women made up 30 percent of graduates in 2011. But women's attrition rates are much higher than men's—last year

**"All of the instructors tend to be women in their mid-20s to mid-30s, so it's not your mom, or your dad, or your teacher telling you technology is cool, it's like an older-sister figure."—HEATHER PAYNE**

alone, 14,000 women left the industry, compared to 2,000 men—and they still make up less than a quarter of core tech positions.

Experts have identified four challenges with reversing the trend. The first is sexism in education. A recent *New York Times* article about the low number of women in science noted that in elementary school, boys and girls perform equally well in math and science, but when they reach high school, fewer girls take physics and calculus. The article suggested that boys are encouraged by parents or teachers to stick it out when they're challenged, whereas girls meet less resistance when they drop a math or science course.

Another barrier for women is the fact that there are few obvious female role models in popular culture for young girls. Girls can see witty women in lab coats who use science to catch the bad guys on TV shows like *CSI*, but they have yet to see an intelligent, well-adjusted female programmer creating a cool app on the big screen.

A further deterrent is experience. For girls starting computer science with no practical experience, seeing male students who've taught themselves programming can be intimidating. It was a trend Putinski noticed when she was in school. "When women enter university, it's just like, well look at all the boys, they've been doing this since they were 12. How am I ever going to catch up?" It was something that she says overwhelmed some female students, who dropped out.

That's something Ladies Learning Code is working to overcome. The organization encourages women to get involved with basic coding and teaches full-day workshops in HTML, CSS and JavaScript. Founder Heather Payne's newest initiative, HackerYou, which offers night classes and full courses in coding, could have more of an effect on getting women to consider career changes.

Where the organization has the potential for the biggest impact is in their workshops for young girls. "All of the instructors tend to be women in their mid-20s to mid-30s, so it's not your mom, or your dad, or your teacher telling you technology is cool, it's like an older-sister figure," says Payne. "That can be something that really changes a girl's mind."

Pearl Chen was 12 years old, sitting in front of her family's clunky IBM knock-off computer with a furrowed brow and a sense of determination. Beside her was a book on a set of programming languages called BASIC, which she borrowed from the library's tiny computer programming section. A piece of her text-adventure game module wasn't working and through trial and error she fixed it. Some would be frustrated, but Chen enjoyed the challenge.

Twenty years later, that hasn't changed. Chen, now a 32-year-old programming educator, got her first taste of technology with that old computer. When the code on her games erred, she taught herself to fix it. "I thought that was a really fun thing about programming," she explains, "looking into all these tiny problems and trying to solve them."

Today, Chen's website Karma Laboratory is a place where she uploads tools for other educators and advertises her own programming and electronics courses. After spending so much time teaching herself how to code, she's teaching others.

Chen grew up the youngest of four children. She and her three brothers all work in tech jobs. She's always been "fairly tomboyish," she says. Being surrounded by men in her work life has never bothered her. She's always fit in with the boys' club, but knows it's not as easy for other women.

"If you're concerned about being excluded or singled out for being a woman, then you really do have to stand your ground," she says. "I think confidence in yourself is the biggest thing to have going into the tech industry."