

CHANGING THE “TECH BRO” STATUS QUO

BY DESSY DUSICHKA, COMPUTER SCIENCE & BIOLOGY, 2025

DESIGN BY VIANNA QUACH, PHARMACEUTICAL SCIENCE, 2025

The tech industry relentlessly innovates through product development, but one key area remains stagnant: its culture. Although women represent almost half of the American workforce, they make up only 20% of U.S. computer science (CS) graduates in recent years. This disparity reveals a deeper, cultural issue extending beyond the industry itself.

The entrenched gender imbalance in CS stems from a culture that is often unwelcoming to women, creating hurdles that extend into classrooms, workplaces, and even global economic conditions. For many women, the challenges begin early — stereotypes and lack of role models — and often escalate throughout their careers in the form of microaggressions, pay inequities, and, in some cases, sexual harassment. Beyond limiting individual female careers, these issues stifle tech’s potential, highlighting the urgent need for a cultural shift.

The current tech climate creates challenges for women, namely imposter syndrome. It’s easy to feel out of place as the only woman on an engineering team or in technical meetings. Combined with gendered microaggressions in the workplace, women often hold back their ideas and limit team potential. Additionally, notions of being a “diversity hire” can chip away at female confidence, making women feel like they need to work harder to prove themselves and ultimately contributing to decreased female retention in tech.

The “glass ceiling” refers to the invisible barriers that prevent women from reaching top decision-making positions within their workplaces. A 2023 McKinsey & Company study analyzed 900 companies, both tech and non-tech, and found that women represented only 28% of leadership in corporate

America, with a mere 6% of leadership roles being held by women of color. The McKinsey study notes that an earlier, more sinister problem is holding back female advancement. This phenomenon is called the “broken rung,” where women struggle to advance out of entry-level jobs as quickly as male peers. McKinsey found that for every 100 men promoted from entry-level to manager in 2023, only 87 women received promotions, creating a gap that only compounds over time.

Men and women are equally ambitious, with similar rates of interest in promotions and career advancement. However, since assertive attitudes are praised in men but frowned upon in women, it’s sometimes tough for women to express their ideas and contribute effectively. Finally, microaggressions and “performance bias” — where women are judged on past accomplishments while men are typically evaluated on future potential — further complicate career growth for women in CS.

This gender imbalance is largely attributed to stereotypes surrounding the field. Popular culture often depicts the typical CS major as a socially-awkward man in a hoodie, who spends most of his time alone and indoors. Funnily enough, repeatedly asking OpenAI’s DALL-E image generation model to depict a computer scientist produces slightly different versions of this same trope. This “geek myth” deters many women who don’t identify with this stereotype, and simply doesn’t represent the broad array of people in the field today.

Additionally, college CS majors are also commonly perceived as being “all-in” — spending countless hours honing their craft, exploring the newest technologies, and building personal projects. While this dedication to the craft is admirable, it can be harmful in beginner-friendly settings when it manifests as male students dominating discussions and intimidating female newcomers.

The industry itself can also feel like an invite-only pool of “tech bros” in an era represented by figures like Mark Zuckerberg

and Elon Musk. In this culture, outspoken men are rewarded, while women showing the same behavior risk criticism.

Zuckerberg's infamous business cards declaring "I'm CEO, bitch" were described by their designer as an "excellent representation of the company culture at the time." I don't think it's hard to imagine that a woman with the same card would be villainized or ostracized. The cards are from 2005 and long-retired, but many aspects of this arrogant bro-culture remain, with new leaders continuing to perpetuate a culture of male toxicity.

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Musk also exemplifies this “tech bro” persona, and the consequences of his actions affect women in his companies. With influence over Tesla, X (formerly Twitter), and SpaceX, Musk's power is undeniable, but his leadership style has reportedly fostered environments where sexual harassment and gender discrimination go unchecked, as reported by multiple former SpaceX employees.

This issue isn't just confined to Musk. Google employees staged a mass walkout in 2018 in response to sexual harassment reports. The company also paid a \$118 million settlement after a lawsuit over gender pay disparity. Similar suits have been filed against Apple, Amazon, Microsoft, and Uber. The industry needs to address these biases to foster truly inclusive work environments where everyone feels safe and equipped to do their best.

Companies can take meaningful steps to create more inclusive environments for women. First, they should analyze outcomes related to female advancement — metrics related to hiring, promotions, and attrition, ideally through an intersectional lens to understand racial dynamics as well. These metrics should then be communicated and used to drive internal policy change. Managers also need proper training to support and evaluate their marginalized employees. When it comes to performance reviews, the criteria for success need to be fair and clearly defined to minimize the chance of gender bias creeping in. Finally, microaggressions need to be openly surfaced and challenged, so that women in the workplace can feel comfortable and valued.

Expanding women's representation in tech should begin with normalizing female voices and contributions, both in industry and academia. Computer science curricula from elementary to postgraduate education should be restructured to empower young women to enter CS and see themselves as future leaders. I vividly remember my 6th-grade “Hour of Code” experience, where I built a simple program using

a drag-and-drop language called Scratch. This was my first exposure to computer programming and something that genuinely sparked my current pursuit of a CS degree.

Requiring students to try one semester of programming in high school could offer similar exposure for students. In theory, this could also create a more balanced gender distribution in classrooms, so girls' first exposure to the CS world would be in a less daunting and more supportive space.

In college, keeping introductory classes as beginner-friendly as possible is crucial. I applaud the Northeastern approach, where a virtually-unknown language called Racket is used in the first required CS course. Although not used in industry, this language is specifically designed to teach students general programming constructs and levels the playing field, allowing newcomers to develop skills without feeling behind — something I greatly appreciated.

Attracting women to the field is important, but retaining them is equally vital. We can help women feel a greater sense of belonging by limiting masculine norms in the workplace and increasing female mentorship opportunities. Women must overcome cultural barriers to access lucrative, high-demand tech jobs, creating gender-based wage inequality that reinforces the gender pay gap. The International Monetary Fund recognizes that closing the gender pay gap could increase GDP by 8% in emerging and developing economies, underscoring the impact of female labor on the economy. Hiring more female engineering team leads, professors, and technology executives could encourage women to see themselves in those positions and ultimately boost the economy.

It can be discouraging to be a woman in technology and in the larger world of STEM, but it also comes with a feeling of empowerment. For me, the potential to be part of the generation that sparks lasting industry change is what inspires me to stay.

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