FIVE I.T. TRENDS - Summer 2025

The list below summarizes IT trends mentioned by the National IT Innovation Center's BILT (Business and Industry Leadership Team) at the June 2025 job skills prioritization meeting on software development and the August 2025 cross-disciplinary trends meeting. The purpose of this summary is to keep faculty – and their students – informed on the ever-evolving IT landscape.

1

Companies are worried about securing AI tools. One software development company noted many clients are reluctant to embrace AI because of worries about data breaches. A healthcare industry employer agreed: half the companies she works with are ready to do AI pilots, but the other half remains reluctant because of cybersecurity issues. Companies overall are concerned about securing "private AIs" that contain proprietary information. Schools that embrace the connection between AI and cybersecurity are positioned to deliver what today's companies need.
Learn more: https://businessdigitalindex.com/research/ai-tool-security-risks-corporate-data-breaches/

2

Quantum computing is coming, but it's not here yet. For now, quantum is best suited for complex tasks like building massive simulations or AI systems. But that will change once quantum breaks encryption. What happens if all the security certificates around the world were suddenly made obsolete? That would surely hasten widespread adoption of post-quantum cryptography (PQC). One employer predicted that as soon as someone uses quantum computing to create accurate financial projections, portfolio optimizations, or systems logistics, businesses will jump on it.
Learn more: https://www.csoonline.com/article/3995036/breaking-rsa-encryption-just-got-20x-easier-for-quantum-computers.html

3

Prompt engineering remains an important skill. Even as LLMs learn more and more, people still need to know how to craft a successful prompt. Prompting , however, may shift. In day-to-day uses, simple, abbreviated prompt commands may soon suffice. Only in more complex, high-stakes business tasks – what one employer called a "bespoke business situation" – will AI prompting remain necessary. This will require students to develop an "exceptional command" of English and to understand how to logically organize complex processes.
Learn more: https://medium.com/enrique-dans/prompt-or-be-prompted-the-ai-survival-skill-no-one-can-ignore-ecbae30f5c08

4

Students need to learn foundational AI and machine learning skills. The BILT seemed to agree AI will augment jobs rather than eliminate them. New hires may not build or implement high-level algorithms, but they need to know the basics of how to use AI and ML, and they need to know when to use one versus the other. Thirty-six months from now, it's very possible half of the graduates seeking software development jobs are not going to get one – they'll have to know AI and ML to get past the first interview. One employer proposed "pre-accelerating" workers by getting AI into students' hands sooner so they're better prepared.
Learn more: https://www.weforum.org/stories/2025/05/why-ai-literacy-is-now-a-core-competency-in-education/

5

In software development, security must be "baked in" from the beginning. Security cannot be added later. Companies will expect a student graduating from a two-year program to be able to write good quality code that runs securely. The foundational skills of secure code-writing are essential. And it takes a lot of practice to master.
Learn more: https://www.infoworld.com/article/3972827/what-software-developers-need-to-know-about-cybersecurity.html

For a deeper dive into these topics, visit NITIC's BILT page: www.nitic.org/industry/national-bilt/bilt-overview.