The unemployment rate for people with disabilities between the ages of 18 and 65 in the US is estimated at 60 to 70 percent. This astounding ratio makes people with disabilities the largest underemployed sector in the US. One major contributing factor is that many people in this group don’t pursue more marketable professions such as engineering, computing, and information technology.

Considering the facts
The Americans with Disabilities Act of 1990—a landmark piece of legislation—failed to improve the employment situation of people with disabilities. This was true even during the booming economy in the late 1990s. Now an economic slowdown has made it more difficult to find work. There are many other alarming statistics about this segment of the population. A visit to the Web site for the National Organization on Disability (read their Harris Survey of Americans with Disabilities at http://www.nod.org, dated 25 June 2004) provides the following facts:

- Three times as many Americans who have disabilities (26 percent versus 9 percent) live in poverty (with an annual household income of less than $15,000).
- They’re twice as likely to drop out of high school (21 percent versus 10 percent).
- They’re twice as likely to have inadequate transportation (31 percent versus 13 percent).
- More than twice as many persons with disability go without necessary healthcare (18 percent versus 7 percent).
- Considering the previously mentioned statistics, it’s not surprising that life satisfaction for people with disabilities is also significantly lower. Only 34 percent say they’re very satisfied compared to 61 percent of those without disabilities.

Working it out
One of the reasons for this high rate of unemployment is that many students with disabilities do not consider computing, engineering, and other highly marketable careers as options for themselves. Currently, the primary choices for a large segment of this group are social sciences, education, and counseling.

At Wright State University, which has a large percentage of persons with disability because of its fully accessible campus, only 1.4 percent of the more than 550 students with disabilities have selected (or intend to select) computing as their major. This ratio would be less than 1 percent if we considered the more than 250 other students with disabilities who haven’t registered with the Office of Disability and function with no assistance.

Several factors negatively impact the career choices of this segment of the population. Data—from both local and national sources—show that a portion of students with disabilities have difficulty in reading and mathematics. Without proper remedial action, these students wouldn’t be able to pursue and succeed in the sciences, technology, and engineering areas.

Multimedia as the helpful medium
Those of us in the computing and information technology community can affect a positive change and help to increase significantly the number of students with disability who pursue computing or other information technology-related professions. Specifically, we in the multimedia community can be effective in making this positive change possible.

Our work is all about different media types, and these can help enhance or compensate sensory abilities. The scope is wide open, spanning from innovative multimedia interface designs to
telepresence for mobility-impaired persons. We could make remedial services for particular learning disabilities more useful if we properly orchestrated mixed-media presentations.

The same could be said for accommodations for people with disabilities, which is another necessity for successfully engaging disabled students. Fortunately, many accommodations aren’t costly and colleges or employers can easily obtain them. For example, voice-recognition software, which resolves one significant impediment, costs less than $200.

Computing and information technology could be particularly attractive to this group for several reasons:

- With the ubiquitous availability of computers and communication, nowadays many employers allow, and even encourage, working from home. Many information technology jobs can be done remotely and don’t require constant presence at the workplace.

- A large number of information technology and computing jobs can be performed despite certain physical disabilities. The cost of accommodations for such jobs is none or minimal.

- People with disabilities possess valuable problem-solving skills because they’re experts in finding creative ways to perform tasks others might take for granted.

Obtaining benefits

The benefits to employers and the community for hiring from this group are many. Employees with disabilities have proven to be dependable, dedicated, hardworking, and productive. Many businesses report that the experience of working with people with disabilities increases every employee’s morale and productivity. And a joint report by the US Chamber of Commerce and US Department of Education emphasizes that employees with disabilities reflect the significant customer base whose career success will impact the overall economy positively.

It’s no surprise that the US National Science Foundation has established a program titled Broadening Participation in Computing, with a goal of increasing the number of underrepresented minorities who will pursue computing for their profession. So the plea to our colleagues is to keep this population in mind—not only in our quest to find innovative uses for our research in multimedia, but toward a concerted effort in bringing persons with disabilities into computing and information technology.

By improving the supporting technologies for remediation and accommodation, we can attract, educate, retain, and graduate a much larger number of people with disabilities. The only other necessity is a little bit of flexibility. Yes, with remediation, accommodation, and flexibility, we can put ability to work.

In other news

I’m pleased to welcome Yu Hen Hu to the editorial board of IEEE MultiMedia. Yu Hen, welcome aboard!

Yu Hen Hu is a professor at the Department of Electrical and Computer Engineering, University of Wisconsin–Madison. He has broad research interests ranging from design and implementation of multimedia signal processing algorithms; computer-aided and physical design of very large-scale integration (VLSI); pattern classification and machine-learning algorithms; and image and signal processing. Hu received a BSEE from National Taiwan University, Taipei, Taiwan, and an MSEE and PhD from the University of Southern California, Los Angeles. He has served as an associate editor for the IEEE Transactions of Acoustic, Speech, and Signal Processing, IEEE Signal Processing Letters, European Journal of Applied Signal Processing, and Journal of VLSI Signal Processing. He is a Fellow of the IEEE.

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