

SE&T Colloquium Series-Fall 2019

Speaker	Dr. Ashraf Khan Department of Electrical and Computer Engineering
Title	<i>Designing an Assistive Tool for People with Upper Extremity Disabilities</i>
Abstract	<p>People with upper extremity disability are unable to perform many regular activities. Generally, they cannot easily afford artificial limbs, in an economically challenged condition and in underdeveloped or developing countries. Even in developed countries, prosthetic legs are more common than prosthetic hands. Many people with an upper limb disability are often resistant to using a prosthetic due to its size and weight. Artificial arms and hands are being improved but not without issues regarding the learning curve and the actual costs of the devices. A foot-operated mouse and voice recognition input can offer options for them; however, there is still a need for their easy access to a computer keyboard.</p> <p>Computer usage for the people with a disability is 25-50% lower than people without one. The mainstream information and communication system devices and systems may be incompatible with assistive devices and assistive technologies; the upper extremity amputee may experience difficulty in using devices that require fine tune. However, productive access to computers is critical to improve the quality of life for the people with a disability.</p> <p>People with upper limb disability can access computer with their toes. A novel, low cost special need tool has been designed and built as a solution. This design utilizes optical method to present an image of a keyboard in front of the user. The functionality of the design has been validated. In addition, experimental design parameters for the tool have been explored. With this novel tool, people with both hands disabled can potentially use a computer with ease which would otherwise be physically and visually stressful.</p>
Date	Tuesday, November 12
Time	4:10-5:00pm
Place	Pioneer 240
	Refreshments will be served at 4:00pm.