

# HotSpot Episode 35: 50-Year Old Computer Gets New Life

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This week on WDD's HotSpot, brought to you by [National Instruments](#) [1]:

- Doctors rely on their sense of touch to identify the edges of hidden tumors and to locate hidden blood vessels and other anatomical structures during open surgery. However, as they switch from open to minimally invasive surgery, their sense of touch is starting to disappear, so a team of engineers and doctors at [Vanderbilt University](#) [2] have developed a wireless capsule to help surgeons regain their sense of touch. According to the university, the capsule is equipped with a wireless sensor that sends information about its position and the force being applied to a computer that uses the data to produce a false-color map of the tissue stiffness. This map can reveal the location of tumors, arteries, and other important structures that the cameras can't see because they are covered by a layer of healthy tissue, providing surgeons with haptic feedback.
- A [Brown University](#) [3] research team won a one million dollar prize at the Brain Tech Israel Conference in Tel Aviv for their breakthrough research in neurotechnology. The team, known as BrainGate, was one of 10 finalists, and their mission is to help disabled people by creating robotic and prosthetic arms that are controlled by neural sensors.
- The [National Museum of Computing](#) [4] has just welcomed the [50-year old ICT 1301](#) [5], also known as Flossie, to its collection. After being rescued for a third time from a scrap heap, the Museum has high hopes to bring the historical computer back to life again. Originally, Flossie was used to produce exam results for students at the University of London. This ICT has a footprint of about twenty feet by thirty feet, and weighs about 5 tons. It comes with a punch card reader and printer built into the body, which was used to enter and save data by means of creating a series of holes in a piece of stiff paper.
- The new Microsoft Kinect-based program is helping those who are blind participate in yoga exercises. A new software program, called Eyes-Free Yoga, developed by the [University of Washington](#) [6], tracks users' movements and offers auditory feedback in real time for 6 yoga poses, including Warrior I and II, Tree, and Chair. Each of the six poses has about 30 different commands for improvement based on a dozen rules deemed essential for each yoga position. The team worked with a number of yoga instructors to put together the criteria for reaching the correct alignment in each pose. The Kinect first checks a person's core and suggests alignment changes, then moves to the head and neck area, and so forth. It also gives positive feedback when a person is holding a pose correctly.

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### Links:

[1] <http://www.ni.com>

[2] <http://news.vanderbilt.edu/2013/10/surgeons-sense-of-touch/>

[3] <http://www.jpost.com/Enviro-Tech/US-brain-research-team-awarded-1m-prize-at-Tel-Aviv-conference-328816>

[4] <http://www.tnmoc.org/news/news-releases/flossie-first-mass-produced-business-computer-rescued>

[5] <http://www.bbc.co.uk/news/technology-24534864>

[6] <http://www.washington.edu/news/2013/10/17/yoga-accessible-for-the-blind-with-new-microsoft-kinect-based-program/>