

## Turning Thoughts into Actions

Robotic prosthetic limbs controlled by thoughts? Sure sounds like science fiction, but thanks to new technologies, this is possible. Advances in areas such as robotics, sensors, and neural engineering are helping those with limited mobility to control movements and complete tasks they would not be able to do otherwise.



Credit: John Conzoli, University of Maryland



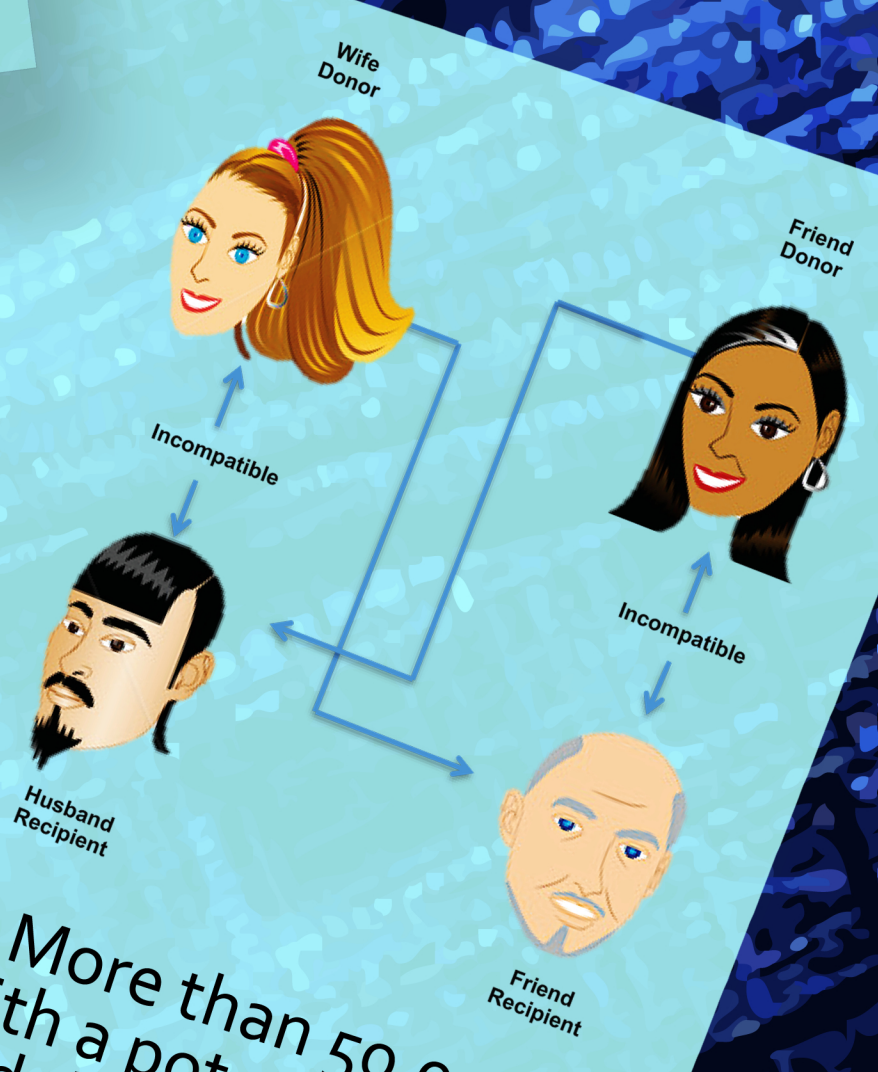
## Self-Driving Cars

Self-driving cars (like Herbie and the Batmobile) are no longer just a figment of Hollywood's imagination! A fleet of self-driving Toyota Prius cars owned by Google has logged more than 200,000 miles, all because of technologies such as sensors, radars, cameras, modeling, and smart algorithms.



## Kidney Exchange

Computer science helps save lives! More than 50,000 people in the U.S. are diagnosed with a potentially terminal kidney disease every year, and though difficult, the best option for many patients is to find a living compatible donor. An algorithm developed by a computer scientist is being used across the nation to compute the optimal matching for swapping patient-donor pairs.



# CS Bits & Bytes

Highlighting Innovative Computer Science Research  
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## Human Computation

By harnessing the wisdom of the crowd, and using human computation, "reCAPCHAs" help to digitize text from across the world. When you are asked by a website to decode more than one sequence of squiggly, distorted characters, one word is a security measure, and the other is unrecognizable text that you have just helped to digitize.



Type the two words:

## Big Data

What's the big deal about Big Data? Last year, people around the world stored enough data to fill 60,000 Libraries of Congress and YouTube received 24 hours of video every minute. Computer science provides tools to collect, store, manage, analyze, and visualize large-scale and complex data sets. The new data revolution will drive discovery and decision-making.



Credit: Electronic Visualization Laboratory, University of Illinois at Chicago