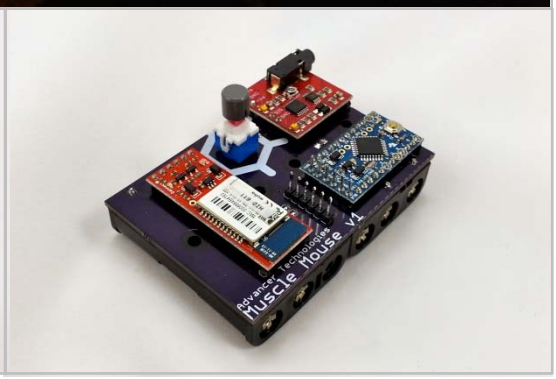
July 30, 2013

THE MUSCLE MOUSE



The Muscle Mouse system harnesses the power of electromyography **to give an unparalleled physical therapy experience and to give help disabled gamers.**

Advancer Technologies has **published the Muscle Mouse as an open-source project** as part of the 2013 National microMedic Contest and invites fans of all ages to **explore, learn, and create their own ways to use this exciting technology.**

Want to learn ***MORE***?

This press kit includes a summary of materials that we can make available to ***you***.

Advancer Technologies

Advancing the Future

Brian Kaminski | 919.324.5002 | advancertechnologies@gmail.com

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WHO

Founded in 2010 and located in Raleigh, NC, Advancer Technologies is a company devoted to developing innovative game-changing biomechatronic technologies and to helping cultivate and educate the next great minds and ideas by posting informative step-by-step tutorials on their technologies.

WHAT

Advancer Technologies just published complete build files on how to build a "Muscle Mouse". This open-source device uses Advancer Technologies 3rd generation Muscle Sensor to empower disabled gamers to more easily play games and to be used as a way to make physical therapy more fun.

WHERE

All the project files can be found on the 2013 microMedic website, AdvancerTechnologies.com or their Facebook page.

WHY

In the spirit of the improving the care of Wounded Warriors, Advancer Technologies decided to participate in the 2013 National microMedic contest, submitting the Muscle Mouse as an open-source project..

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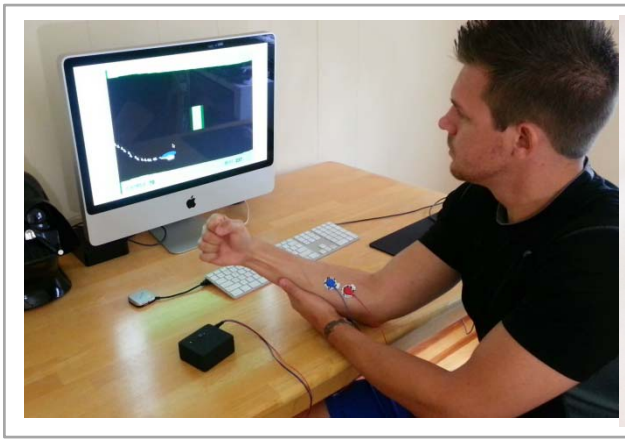
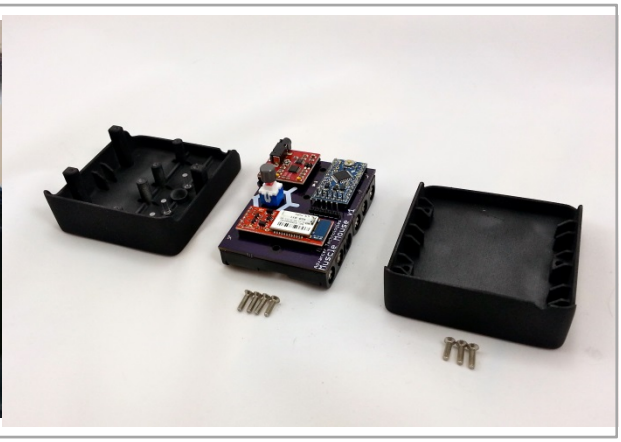
Bionic Iron Man Armor





Advancer Technologies's "Muscle Mouse" harnesses the power of electromyography to make physical therapy more fun and to make gaming easier for the disabled.

At the core of this AAA battery powered device is the powerful yet low-cost Arduino Pro Mini microcontroller (a favorite among hobbyist and students), SparkFun Electronics BlueTooth module, and Advancer Technologies' 3rd generation muscle sensor.

The Muscle Mouse is designed to allow the user play the classic helicopter game (shown below) on any mouse compatible Bluetooth device. The user simply has to navigate to any of the many available websites that provide this game for free and position the mouse cursor over the game window. The Muscle Mouse gives the user the power to navigate the helicopter through the game course simply by flexing their muscle to move the helicopter up and relaxing the muscle to move the helicopter down.

You can build your own Muscle Mouse by downloading Advancer Technologies's project files posted on the microMedic Contest site as well as their own website. These files include everything you need to reproduce the Muscle Mouse down to the smallest detail.

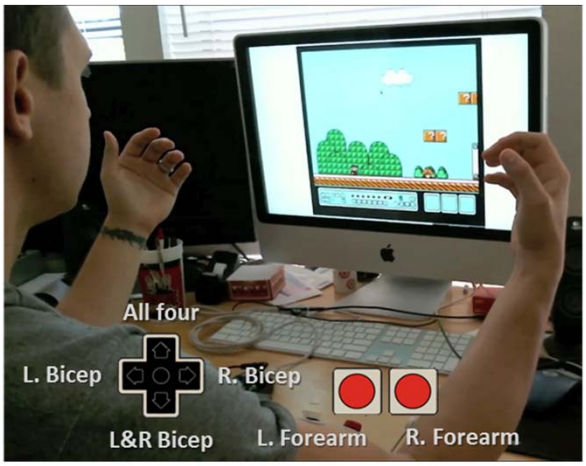
May the Force be with you.

What is electromyography?

Measuring muscle activation via electric potential, referred to as electromyography (EMG), has traditionally been used for medical research and diagnosis of neuromuscular disorders. However, with the advent of ever shrinking yet more powerful microcontrollers and integrated circuits, EMG circuits and sensors have found their way into prosthetics, robotics and other control systems.

Past Tutorials

USB EMG Biofeedback Game Controller



Advancer Technologies' last tutorial guided readers through the process to make a muscle sensor game controller that is able to play computer game by flexing their muscles. This controller uses the same sensor technology as the Bionic Armor but with a total of four sensors to give the user six-button gameplay control. Their YouTube demo video of the controller went viral and garnered over 140,000 views in a matter of days.

Bionic Iron Man Armor

Advancer Technologies' "Bionic Iron Man Armor" harnesses the power of electromyography to give fans the power to directly control an Iron Man repulsor ray simply by flexing their muscle. When the wearer flexes their muscle, the Bionic system will play the harrowing repulsor charging-up sound effect from the Iron Man movies. Then, when the muscle is relaxed, the repulsor will emit a repulsor firing sound effect and flash on the LED lights attached to the palm of the glove.

Professional Biography

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Brian Kaminski graduated in May, 2006 from North Carolina State University with a BS in Biomedical Engineering with a concentration in Biomechanics. While at North Carolina State University, Brian was involved in projects relating to biomechanics, biomaterials, tissue engineering, computational physiological modeling, and biomechatronics. At the end of his undergraduate studies, Brian led his senior design project group in the design of an autonomous rehabilitation glove for recovering stroke patients. In December of 2007, Brian received an MSE in Mechanical Engineering from the University of Michigan – Ann Arbor. Brian's graduate studies emphasized biomechanics, biomechanical design and prototyping, and biomechatronics.

In 2010, Brian founded Advancer Technologies, a biomechatronic technologies company, to pursue his biomechatronic design and research projects. Advancer Technologies is a rapidly growing biomechatronic/biomedical company whose sensors can be found on electronic parts stores across the internet, such as SparkFun.com. Brian and his company are devoted to developing game-changing biomechatronic and biomedical technologies as well as cultivating and educating future generations of innovative scientific minds. To promote all forms of interest and learning into science and technology, Brian frequently posts informative tutorials and videos on how to incorporate biomedical technology into some amazing projects, such as a Myoelectric Video Game Controller and Bionic Iron Man Armor. Both of these tutorials' videos went viral on YouTube receiving over 363,000 views, collectively.

In the Press

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- **Gizmodo**, "How To Build Your Own Muscle-Controlled Iron Man Repulsor", 10Apr2013
- **CBS News**, "Watch: How to make your own working "Iron Man" armor", 11Apr2013
- **io9**, "This awesome Iron Man cosplay could actually control robotic exoskeletons", 10Apr2013
- **Engadet.com**, "USB Biofeedback Game Controller lets you play Mario with your guns", 16Dec2011
- **Kotaku.com**, "Flex Your Muscles and Make Super Mario Bros. More Like QWOP", 17Dec2011
- **Dvice.com**, "Play old school NES games by flexing your biceps and forearms", 16Dec2011
- **Joystiq.com**, "Play video games with your muscles", 17Dec2011
- **Venturebeat.com**, "Biomedical company creates muscle sensor based game controller", 16Dec2011