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# UnoJoy!: A Library for Rapid Video Game Prototyping using Arduino

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**Abstract**

UnoJoy! is a free, open-source library for the Arduino Uno platform allowing users to rapidly prototype system-native video game controllers. Using standard Arduino code, users assign inputs to button presses, and then the user can run a program to overwrite the Arduino firmware, allowing the Arduino to register as a native game controller for Windows, OSX, and Playstation 3. Focusing on ease of use, the library allows researchers and interaction designers to quickly experiment with novel interaction methods while using high-quality commercial videogames. In our practice, we have used it to add exertion-based controls to existing games and to explore how different controllers can affect the social experience of video games. We hope this tool can help other researchers and designers deepen our understanding of game interaction mechanics by making controller design simple.

**Author Keywords**

Video game controllers; prototyping tools.

**ACM Classification Keywords**

H.5.2 [Information Interfaces and Presentation]:  
Prototyping.

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*CHI 2013 Extended Abstracts*, April 27–May 2, 2013, Paris, France.

ACM 978-1-4503-1952-2/13/04.