Go digital with RC hobby servos

The digital servo controller circuit I have made can be used to create a servo out of any geared-motor and potentiometer, or used to modify any regular hobby servo by replacing the circuit inside the servo. The control bus uses the popular I²C bus standard. The prototype uses a PIC16f873 and takes advantage of it's ADC, PWM and I^{2}C peripherals.

I have completed over 20 working prototypes of the digital servo circuit replacement. These prototypes are being used in my Symapod robot and allow me to read/write to the servos as a series of registers. These registers include the actual and desired position, maximum speed and force being applied to the servo. External sensors can also be connected to the servo and addressed through the same servo interface; this allows each joint to have sensors outside of the servo casing. Servos can also be daisy-chained to make cabling shorter.

I am also an active participant in the openservo project, whose goal is to develop an open source digital servo. I encourage you to take a look and join our group discussions on the openservo forums.