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ECE 387

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Midterm Proposal: Fingerprint Scanner

For the midterm I chose to interface an arduino uno with a fingerprint scanner. The fingerprint scanner I am implementing is the GT511C1R from ADH Technology. I chose this one to work with because it was known to interface with the arduino and the newest version (C3) of the product had been known to have new bugs that the C1 version did not. The module includes an on-board optical sensor and a 32-bit CPU, so it will do all of its computations itself, therefore only awk and command signals need to be sent of the serial communication pins.

The module will connect to the Arduino Uno using a JST-SH connector that will connect the Tx, Rx, Vcc, and Gnd pins of the Arduino Uno to the fingerprint scanner. The scanner confirms the fingerprint identification using the SmackFinger 3.0 algorithm, and uses a simple UART communication with a 9600 baud rate serial communication, which is the default serial transmission rate of the Arduino Uno.

I am concerned that the reduced memory capacity of C1 system, compared to the newer C3 version, will cause bugs when saving and checking multiple fingerprints as I do not want to rely on any of the memory of the Arduino Uno because the Uno has limited memory as well and I do not want to tax the Tx and Rx pins of my system.

Overall, I hope for a seamless integration of the GT511C1R fingerprint scanner module with the Arduino Uno. If the process is underwhelming and not complicated enough, I will experiment with taxing the memory of the module by seeing how many prints I can store before degradation of identification, and to see how well the module handles partial prints.