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CIS 663 Biometrics

Paper Milestone #2 – Problem Domain and Data Source

Problem Domain:

I plan to do my research project and subsequent paper on exploring tactics for device “bio”metrics, where I try to build an algorithm that can distinguish and authenticate the actual hardware that requests originate from. I plan to explore concepts such as CPU temperature, computation times for specific problems, exact system clock, and potentially other avenues after additional research.

I expect to spend time fleshing out further options for identification of hardware, implementing a method to measure these biometrics, and then exploring ways of doing those measurements in a way that is either concealed or difficult/impossible to circumvent. I further expect to spend time exploring both the best application for exhibiting my code, but also to discuss existing and potential future applications in industry.

Data Source

I will purchase several small devices to run tests on. I expect to use Arduino devices for the purpose of getting enough of these devices to make somewhat meaningful conclusions. I plan to have four total devices, two each of two different hardware sets. This should allow me to show an ability to differentiate between two different types of devices (general success), but also between two devices of the same type, based on more minute differences in their assembly, age, or exact hardware batch. The exact devices have not been selected yet, but I hope that the scale of data required to train using my chosen biometrics will be able to be provided from these devices and not require using any outside database.