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The project:

Implement a C# code that generates an artificial signature from a real signature to use it for online signature verification. We have some signature databases with online signatures represented in X, Y coordinates and other features. Using these points, the student must implement a code to generate similar signatures for the same signer.

2nd slide

Currently one of the biggest problems of the signature verification is the lack of available training samples:

There is only a handful of datasets available(eg. SVC2004, SUSIG ,MCYT-100 and etc.). It’s not an easy task to gather signatures individually to train a signature verificator, so my task was to try and generate signatures by taking an already existing dataset( SVC2004 in this case). After doing a lot of research on how to approach this task I couldn’t find any definitive approaches. There we’re only a few papers that had some relative information but they used the images of signature to extract the data from that SVC2004 already provides so those methods we’re also unapplicable. So I came up with two methods:

2nd slide

1. Randomization of the signatures withing a threshold
2. Newton’s law of Gravity (Sounds funny for such a problem but it actually works like a charm)

And lastly Swallow by black hole: Use it if you really dislike someones signature and would like to see it be gone before your eyes 😊