Cameron Ulrich

Total Image Encrypt

MSCS 630 Project Milestone

Abstract -- This milestone paper will discuss the implementation of a project that uses AES (Advanced Encryption Standard) to encrypt a text with a key, and embed the text into an image. The image will also be encrypted to add more security. There is also a page on my site to decrypt those.

1. **Introduction**

   The idea for this project couldn't have come at a better time. With Coronavirus keeping a majority home in quarantine, people need to work online. As a result, many important and sensitive documents and images need to be sent across the internet to other employees. The AES algorithm allows for both users to have a key beforehand and so the image and text cannot be seen until decrypted.

2. **Background and Related Work**

   Many other researchers and past students in this class have done similar projects with image encryption and also text encryption, but I haven't seen both be done together.

3. **Methodology**

   Currently, the project is successfully using React to implement everything as a webapp. I have successfully implemented an AES encryption algorithm on one page and an AES decryption algorithm on another for the text only. I am currently researching and attempting to incorporate the image encryption and decryption algorithms to the site.

4. **Experiments**

   The tests performed so far is making sure that the text is successfully encrypted and that the user with the same key can decrypt that message. I have been testing out many ways to get an image encrypted and have fallen short so far, but should be able to figure it out soon.

5. **Discussion and Analysis**

So far the web app I've built with React has gone very smoothly. Additionally, the encryption and decryption for the text with a key has also gone very smoothly. The image encryption however, has been a much tougher time to research and figure out. I may look for other similar options soon.

6. Conclusion

Overall, the project has been running smoothly until I reached the image encryption, which has been a setback, but I plan to resolve this issue soon.

7. References/Bibliography

[1]. P. Radhadevi, P. Kalpana, "Secure Image Encryption using AES", P. RADHADEVI* et al, Volume: 1 Issue: 2, ISSN: 2319-1163, page 115-117.