TO: Elizabeth Delf

FROM: Rhea Mae Edwards

DATE: April 21, 2016

SUBJECT: Research Summary Report: Computer Science
            (Research Summary Report WR 327 Assignment)

INTRODUCTION

The purpose of this report is to state and present personal findings of four scholarly sourced articles related to the field of computer science.

Personally, there are many unknown areas that I have yet to discover within my declared academic major of computer science. This report consists of newly found research that I have recently discovered. These findings were highly intriguing to learn about and has expanded my limited knowledge of the vast field of computer science.

RESULTS

Sources Cited in IEEE

S. K. Das and B. C. Dhara, "A New Secret Image Sharing with Arithmetic Coding," in 2015 IEEE International Conference on Research in Computational Intelligence and Communication Networks, Kolkata, 2015, pp. 395-399.

Sujit Kumar Das and Bibhas Chandra Dhara, in their conference publication, "A New Secret Image Sharing with Arithmetic Coding," notes that there is a secret image sharing method through arithmetic coding to increase the security of messages through visual image pixels. They support their claim by first defining image coding characteristics of the varying intensities of pixels visual displayed, and then through share construction with arithmetic coding, there are formulas and processes that can be used to greater secure hidden messages, and finally stating the importance of the multiple shares and paths needed based off the calculations and reasoning of the ultimate security found through presented experiments. Das' and Dhara's purpose is to inform their findings through research and experiments of concluding to the (t, n) threshold of the secret image sharing method in order to formally present their findings efficiently, increasing awareness and applicable reasoning. They establish a casual and highly mathematical and technical tone for interested individuals working and studying in the similar subject field of cryptography through visual images.

J. Z. Wang, T. X. Wu, and T. Y. Sun, "An Audio Secret Sharing System Based on Fractal Encoding," in 2015 International Carnahan Conference on Security Technology, Taipei, 2015, pp. 211-216.

Jing-Zhong Wang, Tian-Xi Wu, and Tsung-Ying Sun, in their conference publication, "An Audio Secret Sharing System Based on Fractal Encoding," claim frequencies of shared audio messages created with the basis of fractal encoding provide an ideal level of security. They support their claim by first defining the overall concept and base of fractal encoding, and then by illustrating their proposed the mechanics of an audio secret sharing system developed through the idea of fractal coding, and finally how to decode an encryption through their system of generated secret messages based off signal to noise ratios developed. Wang's, Wu's, and Sun's purpose is to describe an audio secret sharing method based on fractal theory in order to bring about awareness about their proposed audio secret sharing system developed through their research and further experiments. They establish a serious and straightforward tone for interested individuals who also specialize in the similar field of study of cryptography of audio sounds and messages.

R. Gayathri and V. Nagarajan, "Secure data hiding using Steganographic technique with Visual Cryptography and Watermarking Scheme," in 2015 International Conference on Communications and Signal Processing, Melmaruvathur, 2015, pp. 0118-0123.

R. Gayathri and Dr. V. Nagarajan, in their conference publication, "Secure data hiding using Steganographic technique with Visual Cryptography and Watermarking Scheme," claim that the use of steganography and watermarking with visual cryptography provides a method leading to high level of security. They support their claim by first illustrating the background and related work of steganography, visual cuptography, and digital watermarking, and then phases of their proposed model, and finally describing their experimental outcomes. Gayathri's and Nagarajan's purpose is to inform their readers in order to increase awareness of their findings. They establish a technical artistic tone for researching individual who specialize in the similar subject matter of visual cryptography.

A. Majumder, A. Majumdar, T. Podder, N. Kar, and M. Sharma, "Secure Data Communication and Cryptography Based on DNA Based Message Encoding," in 2014 International Conference on Advanced Communication Control and Computing Technologies, Ramanathapuram, 2014, pp. 360-363.

Atanu Majumder, Abhishek Majumdar, Tanusree Podder, Nirmalya Kar, and Meenakshi Sharma, in their conference publication, "Secure Data Communication and Cryptography Based on DNA Based Message Encoding," claims a technique of encryption that will enhance the message security. They support their claim by first introduction, then proposed idea, and finally experimental results found. Majumder's, Majumdar's, Podder's, Kar's, and Sharma's purpose is to inform their readers of their research and experimental studies in order to increase awareness of what they are presenting. They establish a technical tone for interested individual who specialize in their similar field of study of cryptography.

CONCLUSION: FUTURE RESEARCH

Through this research, I have greatly enhanced my knowledge on the subject cryptography in general. There are a number of encoding messages, such as through text, visual images, and audio messages. For future research, I will plan on discovering more how I can apply such a matter to

my own personal work experience beyond of education, because such a field of cryptography has become of my high interest solely through this research of this report.