CIS377 Final Paper Outline

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Abstract

“As the demand for graphical computing power has skyrocketed over time, the amount of consumer-grade electronics with discrete Graphics Processing Units (GPUs) has risen to match this demand. As GPUs become a more integral part of the average person’s devices, it becomes critical that they do not present themselves as a possible attack vector for malicious actors. This paper will examine various vulnerabilities and backdoors that exist in consumer-grade GPUs, and consider various solutions to these vulnerabilities, weighing the pros and cons in an ever-evolving cybersecurity landscape. “

Intro

Brief history of the GPU

GPU Architecture

What is a SCA?

Power consumption SCA

Electromagnetic emanation SCA

Timing info SCA

Sound SCA

What is AES encryption?

Attacks

Highlight several articles on SCAs

Highlight several articles on malware that uses the GPU

Defenses

Highlight several articles

Conclusion

Summarize

What should be researched in the future?