

Thesis Project Portfolio

Fraud Fighters: Using Serverless Architecture and Next.js to Fight Fraud

(Technical Report)

Loot Boxes: Examining Gambling in Video Games

(STS Research Paper)

An Undergraduate Thesis

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In Fulfillment of the Requirements for the Degree

Bachelor of Science, School of Engineering

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Executive Summary

For my technical project I wrote about a project I worked on while interning at Capital One. Capital One manages fraud by creating concerns about credit cards it suspects might be used for fraud. In their previous system, concerns needed to be created manually, which required filling out information using a form. As summer interns, we were tasked with creating a system that would automatically import account information, speeding up concern creation. We decided to leverage AWS Lambda, S3, and Next.js to build and deploy a web application which integrated multiple APIs to gather account and credit card information. Our project decreased the time to create a concern by over 90%. Although we successfully developed and deployed our project, in the future we would like to make the onboarding process for new teams more fluid.

For my STS research paper, I researched loot boxes. Loot boxes are a type of item in video games which contain a variety of items of differing rarities. Players can open the loot box and randomly receive one of the items. A common monetization method for video games is for game publishers to charge players to open/acquire loot boxes. Since the item the player receives is random and can often be sold for real world money on a secondary market this system strikes a close resemblance to gambling. For my research paper I looked closer at this similarity to see if loot boxes are gambling both from a legal perspective and from an ethical/impact perspective. I also conducted research on the perception of loot boxes within three different reddit gaming communities, each with a different implementation of loot box mechanics. From my research I found that depending on the implementation of a loot box it appears to meet the legal definition of gambling. My research into the community perception showed that community sentiment on loot boxes seemed to depend on if the loot boxes offered cosmetics or gameplay alerting rewards. However, the existence of a secondary market seemed crucial in finding evidence of addiction within the community. However, due to the

qualitative nature of this research more quantitative results are required before stating the impacts of certain kinds of loot boxes.