



BITS 3443 DIGITAL FORENSIC

Assignment 2: In the Eyes of Forensic Investigator

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Episode 3 Synopsis

For their next case, users are taking Hyo Jung's last video and then editing it. Their task is to find the degree of defamation in the videos and their intent. One of the uploaders goes by the username "phantom0308". They traced the physical address of the username and found a dead woman in their house. The team found themselves chasing after the criminal who's responsible for the serial killing. After investigating the victim's email, their next lead leads to a musical theatre called 'A Magician's Dream'. Woo Hyun and Kang Mi attended the musical theatre but Kang Mi was kidnapped during the show's finale.

(104 words)

The Investigation Process

The investigation process started when the cybercrime team worked on a new case which analyzed the series of video clips called 'Shin Hyo Jung prank'. At 13:09, the team gathers in a meeting room to discuss the case. After a while, the team had listed out the people who uploaded the clips, 50 users altogether with their username. One of the uploaders is 'phantom0308' which is the criminal the team had been tracking for a long time. 'Phantom' username may look common but when added with 0308, it's rare that the number is identical. At 20:03, after Ki Young tracked where the clip was uploaded, he successfully got the IP address (202.1.500) of the video to pinpoint where the video was being uploaded. With the IP address, he and Kang Mi go to the physical address of it. At 20:56, at the house of the physical address, they encounter a murder crime involving a woman. This crime will be deeply explained in the 'How do they face the case' section later.

At 25:52, the investigation continued with Ki Young and Kang Mi interviewing the journalist (Seung Yeon) who had contact with the crime victim (Young Suh) to gather intel about the case. The result of it, they found out that the Young Suh is a moderator of a group named ShinJinYo, solely for demanding the truth about Hyo Jung's sex scandal.

At 29:06, the team had a meeting regarding the phantom0308's clip again. The team leader (Hyuk Joo) ordered his subordinate to compare the woman's face in the clip with the missing person reports. This is because the woman in the clip is not the same as the crime victim's face. Based on the autopsy result of the crime, they found out that the killer killed the victim then uploaded the clip.

For the murder crime, based on the interviewing of friends, neighbour and colleagues of Young Suh, mild-mannered person who gets along with most people. Based on the security camera, they don't get any intel since the crime area doesn't have a lot of security cameras. The result of analyzing Young Suh's cellphone, there's no anything suspicious about her log calls or internet search logs. Ki Young logs in to Young Suh's site to gather intel with only her ID because he already has her phone and can easily change her password.

Suddenly, at 35:35, they got the sudden news about the new location of Phantom, which is the IP address with the physical address. Unfortunately, Ki Young does his own way and his other team members go straight to the physical address. Ki Young uses a scanning program to attack the Phantom's IP address using his old Hades Laptop. Ki Young can know what happens on the killer's machine in real time. After Ki Young successfully infiltrates the killer's machine, he gets to know various pieces of evidence such as the name of the woman for the first Phantom's clip (Han Yuri) and a silhouette of Phantom's real face. By this means, the serial killer knows who killed Hyo Jung (the actress).

At minute 40:46, the other team members broke into the house and encounter a murder crime. This also will be explained in the later section. After the inspection of the second murder crime, at minute 45:50, the cybercrime team member with Director Jun Jae Wook do a meeting regarding this crime and labeled these crime cases as serial killing as both of the murders crime has same evidence. During the meeting, one of the team members got the news about the first woman in the Phantom's clip (Han Yuri). Based on the analysis, the suspect of the murder of Han Yuri is his boyfriend (Yang Seung Jae) and its revealed that he is ex-manager of the Hyo Jung (the actress). By all these information, we can conclude that Han Yuri's murder is first case, Young Suh's murder (death by strangled) is second case and Seo Eun's murder (death by hung) is third case.

Young Suk (One of the team) made an interview with the friend of the second victim's chat friend, and found suspicious about the second victim's message toward her friend and Ki Young concluded that is computer stalking. Ki Young found out about the email virus in both of the second and third victim's email facade by a free ticket show called 'a Magician's dream'. The virus in the email is sent to the forensic team to be analyzed. Ki Young also got the show's IP address and go to the physical address of the show with Kang Mi in minute 52:58. At the theater front desk, they both asking the staff about the information of the show such as the person whos in charge of the free ticket. It is revealed that the one who won the free ticket will seat on special VIP seat (D7).

On the other side, Young Suk and Tae Gyoon (team members) tracked Seung Jae (Han Yuri's boyfriend) into computer centre and get intel out of him regarding the murder of Han Yuri. They both bring him to interrogation room and dig out all information regarding Han Yuri, revealed that Seung Jae is the one who started the Hyo Jung's sex scandal rumors and . Meanwhile, at minute 56:48, at the theater Ki Young and Kang Mi decided to replace the current free ticket holder who is the journalist (Seung Yeon) with Kang Mi. At minute 1:1:32, during the special occasion of the show, Kang Mi suddenly disappears and Ki Young searches the whole show for her but can't locate her.

The Tools

1. Reverse Tracer v1.2 by NPAC

At 20:43, Woo Hyun uses this tool to detect the IP address of the video which was uploaded by a user with username phantom0308. He then discovered the IP address to be 202.1.500. The IP address then leads to a physical address located at Seongdong-gu.

2. Scanning Program

At 37:39, Woo Hyun uses a program which is called “scanning program” to attack the computer with the IP address of 74.224.221 which is where phantom0308 is currently at. By using this method, he uses the weakest service port to send the virus. When the exploit is successful, Woo Hyun is able to see what phantom0308 is doing on that computer. Woo Hyun sees him uploading a new video with Young Seo’s face on it. The file is stored on a portable hard drive, and Woo Hyun found a folder for Shin Hyo Jung. Inside Hyo Jung’s folder are photos of her dressed as Christine from ‘The Phantom of the Opera’, and another man dressed as Phantom. Then there is another photo of Hyo Jung in a cafe with another man who wears the watch with a globe map.

The Evidence

Kang Mi does a presentation to the team on their new case. Since the video of Hyo Jung’s murder was released a year ago, her family is claiming that the last video of her was unlawfully used. Apparently users are taking Hyo Jung’s last video and then editing in heads of other celebs or politicians. It’s become a bit of a jokey game to kill off someone else over and over again, with plenty of people posting up videos. So their task is to find the degree of defamation in the videos already uploaded and their intent. They then need to see the user’s frequency in uploading videos, and then they can decide whom to punish.

In the progress of this investigation Young Suk hands Kang Mi a list of all the usernames of people who uploaded the Hyo Jung video that is one of the pieces of evidence in the investigation at 17:16. When Kang Mi slams her chopsticks into the soup, which then splatter all over the place at 19:00, it is when she finally gets a good look at the names on the list of the usernames that is the lead of evidence in their investigation. One of the users is ‘phantom0308’. That rings a bell for Woo Hyun because the Phantom’s email address when he contacted him about the file was also ‘phantom0308’. They suspect that Hyo Jung’s killer is uploading the videos too. In the investigation about user phantom0308, Woo Hyun would only be able to track down the user through the IP address at 20:50. The IP address where the video was uploaded leads them to Seongdong-gu. Kang Mi and Woo Hyun enter the house at 22:00. Kang Mi spots a body first at 22:25. They didn’t find any connection between the user ‘phantom0308’ with the

murdered girl yet. Seung Yoon tell both Woo Hyun and Kang Mi the information when she interviewed the dead girl named Baek Young Seo at 26:00. Woo Hyun and Kang Mi concluded the victim was cyber-stalked before her death, making the case a cyber crime.

Young Suk has the autopsy report that is the evidence, which states that Young Seo was killed via strangulation sometime on the evening of May 30 at 29:39 in the video. Next, Kang Mi notices that the video uploaded from Young Seo's home was done on May 30th at 10:30pm. So it is confirmed that the user 'phantom0308' must have killed Young Seo first, then uploaded the video. More evidence found at 30:24, Woo Hyun comes in with photos of the writings on the wall. He's found out that the writings on the wall are actually hateful comments Young Seo had posted when she was part of Shin Jin Yo. Some hard evidence can be found by collecting cctv's video but unfortunately there were no CCTV cameras in Young Seo's area. Woo Hyun found more evidence of what phantom's hard drive is used to upload new video. It is the external hard drive and in 'F:' drive. The external hard drive is a good device to hide many information, so it is a great evidence if it can be found.

Woo Hyun got a great lead by accessing the phantom's external hard drive remotely and found a photo of Hyo Jung in a cafe with another man who wears the watch with the global map that is suspected as the killer of Shin Hyo Jung. Unfortunately, when Woo Hyun is trying to adjust the angle of the photo so that he can get a better look at the Global Map Watch man's face. Suddenly, the image disappears for Woo Hyun, it is because 'phantom0308' had disconnected his hard drive from the computer to run from the cops. At 52:10, Woo Hyun also found another evidence on how the virus spread to the victim's computer and then getting controlled by the hacker. It is by clicking the email with an attachment about free tickets in the show. At 54:25, both Woo Hyun and Kang Mi found out that everyone that receive VIP e-ticket for the show always get the seat D7. This can be evidence found for the connection between the killer and the row seat D7 because it is rumored that every girl that sit there will die.

How do they face the case

At 13:10 the Cyber Safety Department was briefed and discussed about their new case, the defamation of Hyo Jung with the spread of her murder video clip edited and posted online on various sites. Their task is to find the degree of defamation in the videos already uploaded and their intent, the users' frequency in uploading the video before deciding whom to punish. At 20:45 after tracing the username "phantom0308" physical address, Woo Hyun and Kang Mi arrived at a woman's home. In the house, they found the woman lying on the floor. Woo Hyun quickly checked her pulse before declaring her passing. At 27:48 they called the whole team to secure the house and collect the evidence at the crime scene. Yough Suh's (the victim) phone was collected and the scribbles on the walls were taken photos of but they were unable to find her laptop. They checked for security cameras around the house but none was found. They interviewed Young Suh's neighbours but they claimed that Young Suh was a well-mannered woman. At 25:50 they also interviewed Seung Yeon, a journalist that had interviewed Young Suh in the past about her and gathered that Young Suh has been receiving weird activities on her laptop such as self-moving mouse and music. In the meantime, the victim was sent to be examined and from there they received the autopsy reports at 29:39, which concluded that Young Suh was strangled sometime on the evening of May 30.

At 52:08 after investigating the similarities between the serial killing victims, they found out that the victims had received the same email about an invitation to a musical play with a file attachment. Woo Hyun made a copy of the file and sent it to the lab to be examined since it is likely the file contains a computer virus that assists the serial killer in controlling their computers. At 52:53 they personally investigate the musical theater.

Comments

This episode shows that every event that occurs in relation to the crime needs to be given more in depth attention. Anything that may also be related to the crime should also be explored to increase the source of the investigation. For example in the scene of identifying who used the username phantom0308 through the list of usernames of whom uploaded the Shin Hyo Jung death prank video to the internet has led to the discovery of the murder of a woman named Baek Young Seo in her apartment. Following the incident, there were a series of similar murders that were closely related to the use of the username phantom0308. The investigation on the identity behind the username phantom0308 is because it is related to the email address used by an individual named Phantom who sent an email to Park Ki Young/Hades about a file called phantom found on Shin Hyo Jung's laptop.

Apart from that, photographs from the crime scene should also be given attention as it may also be a clue during the investigation. For example, in the murder of a woman named Baek Young Seo in her apartment there was a writing on the wall of her apartment. The pictures are an indication of the motive for the case which is revenge. The next series of murders is similar to the one that happened to Baek Young Seo where the murder victim was one of the person who uploaded a bad post against Shin Hyo Jung.