

Teaching Case

Deposit a Check, Get Arrested – The Case of Mishandled ATM Camera Forensics

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ABSTRACT

Fraudulent checks were deposited to an account at a Wells Fargo branch in Parsippany, NJ, and a church pastor was wrongly identified by photograph/video capture at the ATM as the person who deposited them. The pastor was later arrested and charged with felony check fraud. After some months, those charges were dismissed by the court. What are the obligations and risks of commercial and criminal forensic investigators in researching digital evidence? How can we learn from this case to mitigate and balance the risks of unfair accusations vs. the risk of letting potential criminals get away?

Keywords: Digital forensics, ethics, evidence handling

1. OVERVIEW

Author's note – this case is based largely on published reports of events. Any allegations of errors or wrongdoing by any party are based on public records and media reports, and most have not been litigated and settled in court as of this writing.

“Let’s imagine that this does go to trial and we get Wells Fargo’s technology expert on the stand and he says, ‘You’re guilty.’ Who do you think the jury’s going to believe?” (Edwards, 2019) What happens when technology alleges that you are guilty, and you as a suspect know that to be false? How can this sort of error happen? How can it be prevented? What ethical implications are there for technologists?

On April 16, 2018, an as-yet unidentified individual went to a Wells Fargo ATM in Parsippany, NJ, and deposited four checks from a New Jersey state government agency, the NJ Turnpike Authority. These checks had been fraudulently modified to direct the funds to someone other than the intended recipient. That same day, the Rev. Jeff Edwards went to this same branch, his usual branch for the last 29

years, and deposited four legal and correct checks into his own accounts (Carter, 2019).

The New Jersey Turnpike Authority, like any other large organization, routinely monitors its checks as they are written and deposited, to ensure that amounts are correct and that each check is processed only once. It detected that four checks written on its bank accounts had each been deposited to two different recipients, and in different amounts from the original checks. This is a strong indicator of fraudulent activity. The four checks were deposited on the same day, and at the same Wells Fargo branch, as Pastor Edwards used.

Acting on a report from the Turnpike Authority, the New Jersey State Police contacted Wells Fargo to request that it find pictures of the person who deposited the fraudulent checks. Wells Fargo returned a picture that it said was associated with the fraudulent deposits. That picture showed Pastor Edwards as the suspect.

The NJ State Police then posted this to their social media sites, seeking help to identify the suspect. Pastor Edwards was alerted by friends and members of his church to these postings of his

picture, and immediately contacted the State Police to try to resolve the issue. He provided copies of the legitimate checks he had deposited, along with copies of his bank statement showing the deposits.

The police then asked Wells to confirm their identification and correlation of the photographs with the deposits, and Wells' subpoena compliance team reaffirmed their findings. Meanwhile, the police had interviewed the person to whom the fraudulent checks had been made out (identified as "Tyler Mathis"), who reported that she had given her bank ATM card and PIN to another individual, an African American male, so he could make deposits to her account. The Turnpike Authority later identified a fifth fraudulent check also made out to Tyler Mathis, but deposited at a Wells Fargo ATM in a nearby town. The person identified as the depositor in this case was an African American male.

The police spent several weeks working with Wells Fargo to confirm its findings, including interactions with at least three differently-named internal units. The final report from Wells provided the same pictures of Pastor Edwards, with the fraudulent check numbers hand-written across them.

The State Police interviewed Pastor Edwards on September 4, and reportedly tried to pressure him into confessing. The police are reported to have claimed that it would be the pastor's word against the Wells Fargo technology expert. When he refused to confess, he was arrested and charged with third degree felony forgery. Months later, after three court appearances by Pastor Edwards, charges were dismissed by the judge. What might have happened had he not had the resources to challenge the prosecutors and Wells Fargo?

2. DIGITAL FORENSICS PRACTICES

Digital Forensics, like other forensic sciences, is subject to a set of evolving best practices for how evidence is handled. In this case, the evidence was owned and analyzed by a private institution, Wells Fargo, and its investigations units. Ultimately, decisions about criminal charges are made by police and prosecuting agencies, relying on the reports from their various sources of evidence.

ATM machines often include a surveillance camera in them, to protect customers against robbery, and to help identify various types of criminal activity at the ATM, such as use of stolen

bank cards, or depositing of fraudulent checks. These cameras can have a variety of levels of integration with the ATM activity records – a simple camera that records and time-stamps activity (perhaps with a time clock synchronized to the ATM, perhaps not) to a camera that explicitly identifies the transaction associated with a particular customer image, so that it is clear which images go with which transactions.

Key practices in digital forensics to protect the integrity and credibility of the evidence include, among many other things, maintaining a chain of custody and preserving the original data, to ensure that the same analysis can be repeated later if need be. It is also subject to an expectation of ethical behavior.

Chain of Custody

The chain of custody is a detailed record of the handling of a piece or collection of evidence, to help ensure that the evidence is not corrupted in any way. Digital evidence is subject to this same rule, and there are guidelines that allow digital evidence to be printed or otherwise made into human-interpretable form and still count as evidence (Infosec Institute, n.d.).

Preservation of Original Data

For digital evidence in particular, it is very easy for data to be modified or mishandled, whether deliberately or accidentally. Standard handling procedures for digital evidence call for a separate copy of the original data to be maintained, and all analysis to be done on a working copy of that original data. With that practice in place, the original forensic analyst, or another, can go back and replicate or disprove their findings (Infosec Institute, n.d.).

Ethical expectations

Digital forensic investigators, whether working in law enforcement or in private industry, have an ethical and legal obligation to perform their tasks with an appropriate level of care. Professional organizations such as the International Society of Computer Forensic Examiners publish the code of ethics to which they hold their members accountable (e.g., ISFCE, n.d.). They include such things as maintaining objectivity, integrity, and diligence, and conducting investigations according to established and validated procedures.

3. DETAILED TIMELINE OF EVENTS

This section provides a detailed timeline of activities that took place, so that students can analyze where errors may have occurred and by

whom, and identify alternative approaches to prevent such errors in the future. See Figure 1, below, for an overview of the timeline.

- April 12, 2018 – four checks are made out by NJ Turnpike Authority to various recipients.
- April 16, 2018 – those same four checks were deposited a second time, for different amounts, to a Tyler Mathis' account at Wells Fargo. It is unknown how the original checks were accessed and/or modified. Deposits made at Wells Fargo's Parsippany, NJ branch ATM.
- April 16, 2018 – Pastor Edwards deposits four legitimate checks into his own personal accounts at the Parsippany ATM, his "home" branch of Wells Fargo.
- April 17, 2018 – a fifth fraudulent check was deposited to Tyler Mathis' account at the Wells Fargo branch ATM in Glen Ridge, NJ.
- April 2018 - NJ Turnpike Authority detects four checks being deposited twice each, for different amounts and to different recipients each time.
- April 2018 – State Police launch investigation, including a May 9 subpoena request for ATM surveillance images from Wells Fargo.
- June 18, 2018 – Wells Fargo provides ATM-captured pictures of Pastor Edwards to State Police in response to subpoena.
- July 9, 2018 – police interview Tyler Mathis. She reports that she agreed with an African American man ("a dark-skinned black male"), identified only as "Cousin Swing", that he could use her Wells Fargo ATM card to deposit checks, and he would give her a share of the funds deposited. This is a role known as a "money mule." Police conclude she has been a victim of a check fraud scheme.
- July 9, 2018 – Police post Wells Fargo-provided pictures of Pastor Edwards depositing checks at Parsippany ATM (see Figure 2, below), and ask for public help to identify him. Post is shared some 466 times in the first day.
- July 10, 2018 - Pastor Edwards is notified of this posting by friends and church members. That same day, he proactively and voluntarily identifies himself to the detectives via e-mail and phone, and provides his bank statement and copies of the checks to police showing legitimate transactions.
- July 10, 2018 – Police remove his photo from the posting, but leave the text of the posting in place on Facebook. Photo remains on radio station web sites in the area for some months later.
- July 11, 2018 – State Police contact Wells Fargo's Subpoena Compliance Unit to request them to verify the accuracy of the photos.
- July 12, 2018 – Wells Fargo's Subpoena Compliance unit confirms its belief that the pictures do represent the fraudulent check depositor. Police ask how the pictures were associated with the checks – in other words, how did Wells know this? Wells replied that that information was not usually released, and it would follow up.
- July 13, 2018 – Wells Fargo's "Research unit" reported that the ATMs in Parsippany were acquired as part of a bank acquisition, and were not capable of automatically associating the check numbers with the images, but they offered to hand-write the check numbers on the images.
- July 19, 2018 – the same four photographs are provided by Wells Fargo to police, with check numbers hand-written on them. Wells reportedly also admitted it could not be sure about the first check number provided, but wrote it on the picture anyway.
- August 2, 2018 – photograph from Glen Ridge ATM deposit of fifth fraudulent check is delivered to police by Wells Fargo, showing an African American male.
- August 17, 2018 – detectives issue new subpoena to Wells to supply the video surveillance data from the Parsippany ATM for the forged checks. No information is available about whether Wells provided the requested information.
- September 5, 2018 – State Police asked Pastor Edwards to come to the police station in Holmdel, NJ (see Figure 4, at end, for map of cities referenced in the case). Police question Pastor Edwards about his involvement with the fraudulent checks, which he denies. He reports that he was told, in an effort to encourage a confession, that Wells Fargo technical staff would testify as to the accuracy of the photographs, and that a jury would likely believe the experts.
- September 5, 2018 – State Police arrest Pastor Edwards and charge him with third degree forgery, a felony, punishable by up to \$15,000 fine and 3-5 years in prison.
- September 5, 2018 – Pastor Edwards calls Wells Fargo during the police interrogation to try to get correct pictures that he hopes would resolve the issue. He reports he was told a week or so later that the ATM at Parsippany did not keep detailed date-and-time records after two weeks," (Carter, 2019) and thus Wells was unable to provide evidence to clear him. The bank staff told him the case had been "closed."
- September 2018 – Pastor Edwards hires an attorney to represent him in the criminal case.

- September 27, 2018 – Pastor Edwards appears in court to enter a plea in his case, in Middlesex, NJ.
- January 16, 2019 – Criminal forgery case against Pastor Edwards was dismissed by the judge in the case, after three court appearances, citing lack of evidence.

4. QUESTIONS

The following questions are provided to spark additional thought and research into the handling of digital evidence in banks, other private entities, and police agencies. We hope to also invite consideration into how to use information more effectively to catch and deter bad behavior, but also to avoid false positives that have potential to severely impact individual lives.

Ultimately in this case, an innocent man was falsely accused of a crime, based on evidence provided by a banking institution. Were there opportunities for either Wells Fargo or for the NJ State Police to have prevented these issues?

Pastor Edwards' name was eventually cleared by the NJ state courts. However, he endured four months with a felony charge against him, and a total of six months under investigation. He notes that without access to legal counsel and a prior sterling reputation, his outcome might well have not been as favorable (Edwards, 2019).

Discussion Questions:

1. Assuming that there was no malice involved (there is no reported indication that anyone was angry with Pastor Edwards before the case, or had any reason to deride him), what combinations of errors might have created the opportunity for this misidentification by Wells Fargo?
2. In this case, the two potential "suspects" (Pastor Edwards and "Cousin Swing") reportedly look very different (Caucasian vs. African American, older vs. younger). If the differences had been less pronounced, could a poor image quality from the surveillance camera increase the risk of mistaken identification? How could this risk be mitigated?
3. Given that many people are less well-established than Pastor Edwards, and may not have access to high-quality legal counsel, what are the risks of such false accusations?
4. Why might someone confess to a crime they did not commit?

5. Wells Fargo at one point reportedly claimed that it could not reexamine its evidence, given that the ATM camera did not retain its date/time synchronization beyond two weeks. Does that claim make sense, given the overall timeline of the case? Note that the picture in Figure 2 shows no time information, which was perhaps cropped out before posting. Figure 4 shows a more typical ATM camera picture (not related to this case), with location and timestamp embedded.
6. Given the model code of ethics from the International Society of Computer Forensic Examiners (ISFCE, n.d.), what potential ethical lapses might have occurred?
7. Are there things that the police agency could have done differently given the facts presented in the case? Why or why not?
8. How might the NJ State Police have been able to improve their confidence in the data they received from Wells Fargo? What else could they have asked Wells to do or to provide?

Research Questions:

The following questions may require additional research on the part of the student.

1. How do ATM surveillance data retention rules vary by state? Why does this matter, for the purposes of both internal and criminal investigations? What about retention of ATM transaction journals? Why are both needed?
2. How has camera and storage technology changed over the last 10-15 years, and how might that affect the trustworthiness, reliability and quality of ATM surveillance records?
3. Wells Fargo described what seemed to be a technology limitation in the ATM surveillance in Parsippany. Consider the costs of replacing the ATM surveillance cameras across a range of ATMs, and across a wide geographic area. What factors contribute to that cost? Why do you think businesses do not routinely update to newer technology?
4. Given what was stated by the various parties in the case, are there technology improvements that might be made to reduce the risk of similar errors in the future?

Debate Topic:

Based on what you have read so far, what do you see as the root cause of this

problem? Was it, for example, the misidentification by Wells Fargo? Some other error in evidence-handling by Wells Fargo? Was it an error in judgment by the State Police? Was it an error by the prosecutors? Conduct a root cause analysis (Rooney and Heuvel, 2004) and discuss the results among your classmates.

5. CONCLUSIONS

This case study provides a detailed look at the information gathered and used in a real-world business setting. The behaviors of bank and police employees can be examined in ways that help to understand how mistakes can be made in handling of corporate surveillance data. It also illuminates the risks entailed in handling data that may be used in criminal prosecution, the need to maintain the integrity and chain of custody of that data, and the potential impact to innocent parties if mistakes are made.

We encourage you to analyze each of the components of this case, to understand what could have gone wrong and to identify ways to improve the likely outcome. No one is immune from making imperfect decisions, so it is important to understand how we are asking employees to make decisions, and whether we are getting the correct results.

As students of information systems and digital forensics, it is important to remember that the information that our systems produce can and should be used to make informed decisions. However, we need to always exercise due care to make sure the information we provide is created and delivered in such a way as to enable correctly informed decisions. The risks of errors carry a range of consequences, and information security professionals should always be conscious of the risk to themselves and others, particularly vulnerable populations.

6. ACKNOWLEDGEMENTS

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Teaching Notes are available for this case, please contact the author directly.

AUTHOR BIOGRAPHY



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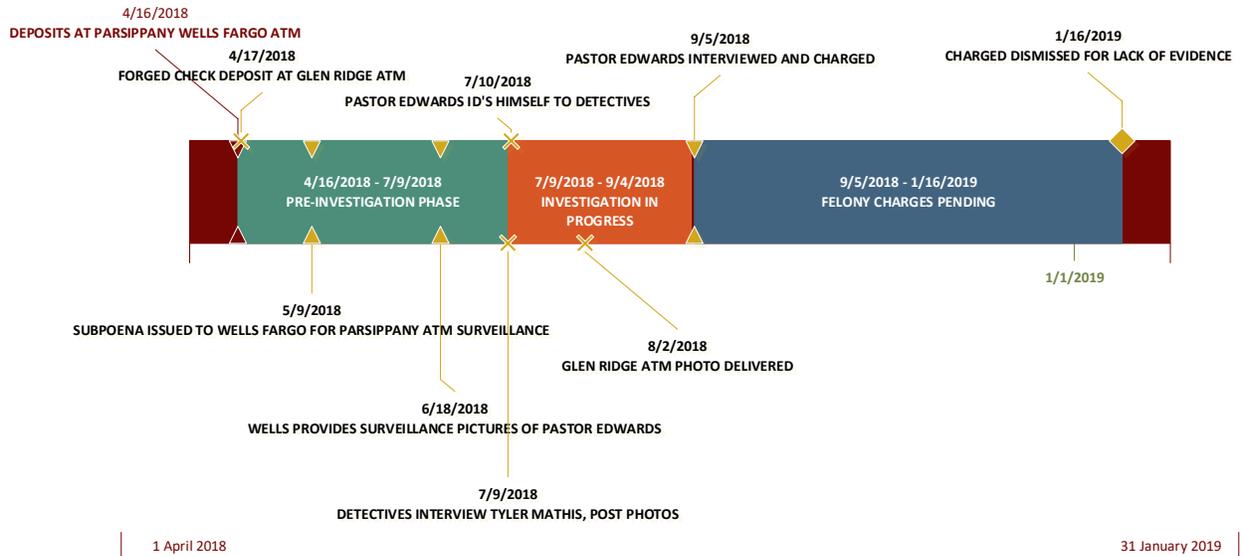


Figure 1 - Timeline of major case events



Figure 2 - Actual ATM photo of Pastor Edwards (courtesy NJ State Police Facebook page)

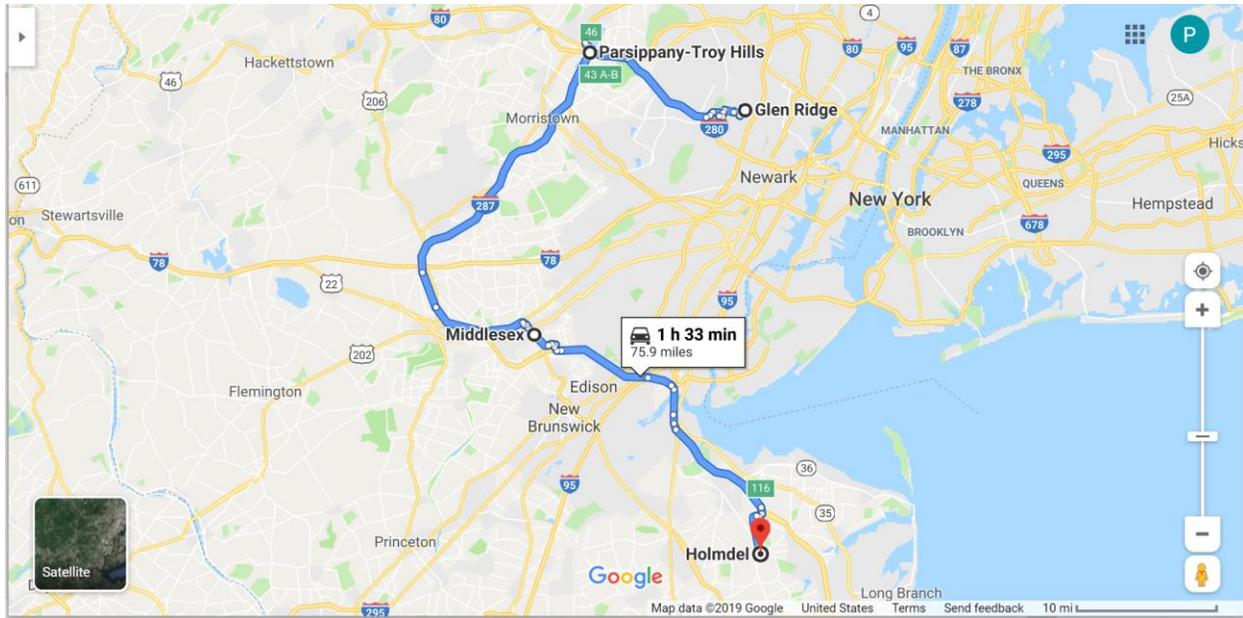


Figure 3 -Map of cities in the case (Source: Google Maps)



Figure 4 - Sample ATM surveillance picture showing timestamps (Source: images.google.com)