

Foundations: Courts & Machine Learning

The relationship between courts and machine learning artificial intelligence is not new. However, introducing our technology into the court system, as well as obtaining search warrants and arrest warrants, presents certain challenges. One of the main challenges we face is the ambiguity surrounding artificial intelligence, which has become a pervasive buzzword in technology and law enforcement, as well as other sectors.

Defining artificial intelligence can be problematic since different people and companies interpret it in various ways. This lack of clarity leads to different degrees of understanding. In the context of Cybercheck, we define artificial intelligence as part of our intelligent stack, which builds upon machine learning.

Court View



Digital Forensics



Intelligence



Visualization (front line)

Machine learning involves the development of computer systems that learn and adapt without explicit instructions. This serves as the foundation for much of our technology stack. Taking it a step further, artificial intelligence represents computer systems that surpass human intelligence and can function autonomously.

It's important to note that everything we discuss here has been introduced into courts in different states, and we have found that it resonates well with prosecutors and judges. However, there is a misconception that our technology should be confined to the digital forensics funnel. In reality, it is a tool utilized not only by digital forensics but also by detectives, front-line officers, intelligence analysts, and prosecutors.

In the realm of digital forensics, there are various tools and technologies available to investigators. These tools range from software like Cellebrite, Magnet Forensics, EnCase, to more visualization front-end tools such as Hawk Analytics and their product Cell Hawk. It is essential to understand that digital forensics is not confined to the boundaries of the court's probable cause world. Instead, it exists in the intelligence realm, which requires a deep understanding of the technology being used.



The Importance of Roles in Technology Development

Roles play a crucial role in the development of technologies used in digital forensics. Building a technology like Cybercheck, which can aid in solving cold case homicides, child exploitation cases, and combating human trafficking, requires a comprehensive understanding of the field. With a background in cyber forensics, digital forensics, and signal forensics spanning several decades, Adam Mosher, our Founder, brings a unique perspective to the table. His experience in operational, strategic, and tactical operations within law enforcement and open source intelligence settings has been instrumental in shaping the technology we have today.

The Significance of Roles in Law Enforcement

Roles are equally significant in the law enforcement sector. In this context, roles can vary widely, ranging from civilian crash investigators to forensics technicians and SWAT officers. Understanding the roles within law enforcement is relatively straightforward, as they have well-defined goals, responsibilities, and clear-cut purposes. Consequently, navigating the court system with these roles is relatively uncomplicated.

Traditional Law Enforcement Roles	How those roles map to Cybercheck
Crime Scene Investigator	ML-Sys-32
Detective (MCU, Narcotics, ICAC)	AI-Investigator-18
Evidence Technician	ML-Correlator-12
Forensic Technician	ML-Collector-11

Complexity of Roles in Machine Learning and Artificial Intelligence

However, when it comes to defining roles in machine learning or artificial intelligence, things become more intricate. We have taken traditional law enforcement roles, such as crime scene investigators, evidence technicians, and intelligence officers, and recreated them in the realm of cyberspace. This mapping of roles allows Cybercheck systems to process data at an incredibly fast rate, ensuring quicker surfacing of evidence and intelligence.



Challenges Faced by the Courts

The courts often struggle with the concept of intelligence officers in the digital age. Understanding how a machine can replicate the abilities of a human intelligence officer, who can sift through social media platforms like Facebook and correlate information, poses a challenge. Defining and integrating these roles into our intelligence stack requires a different approach.

Importance of Familiarity for Judges

This brings us to the question of why familiarity with these roles and technologies matters in court. Through our experiences, we have learned that aligning roles in technology with their counterparts in law enforcement, such as forensics technicians, helps the court and judges grasp the concepts more easily. When it comes to admissibility during hearings, explaining technology concepts that are entirely new to the court becomes an uphill battle. Some judges may require explanations even for basic concepts like an IP address, making it crucial to bridge the knowledge gap.



Describing Technology in Layman's Terms

To ensure effective communication with judges and make our technology understandable, it is essential to describe it in layman's terms. By mapping roles from forensic technicians and evidence technicians to the system's structure, operations, and functionalities, the entire process becomes much smoother. This approach allows us to bridge the gap between the familiar and the unfamiliar, enabling judges to better comprehend the technology at hand. Roles play a pivotal role in both the development of technology for digital forensics and its integration into the legal system. By aligning roles in technology with their counterparts in law enforcement, we enhance understanding and facilitate smoother communication in the courtroom. Ultimately, this helps ensure the admissibility and effectiveness of digital forensic evidence in legal proceedings.