

# Chapter 29

## Digital Forensic and Machine Learning

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### ABSTRACT

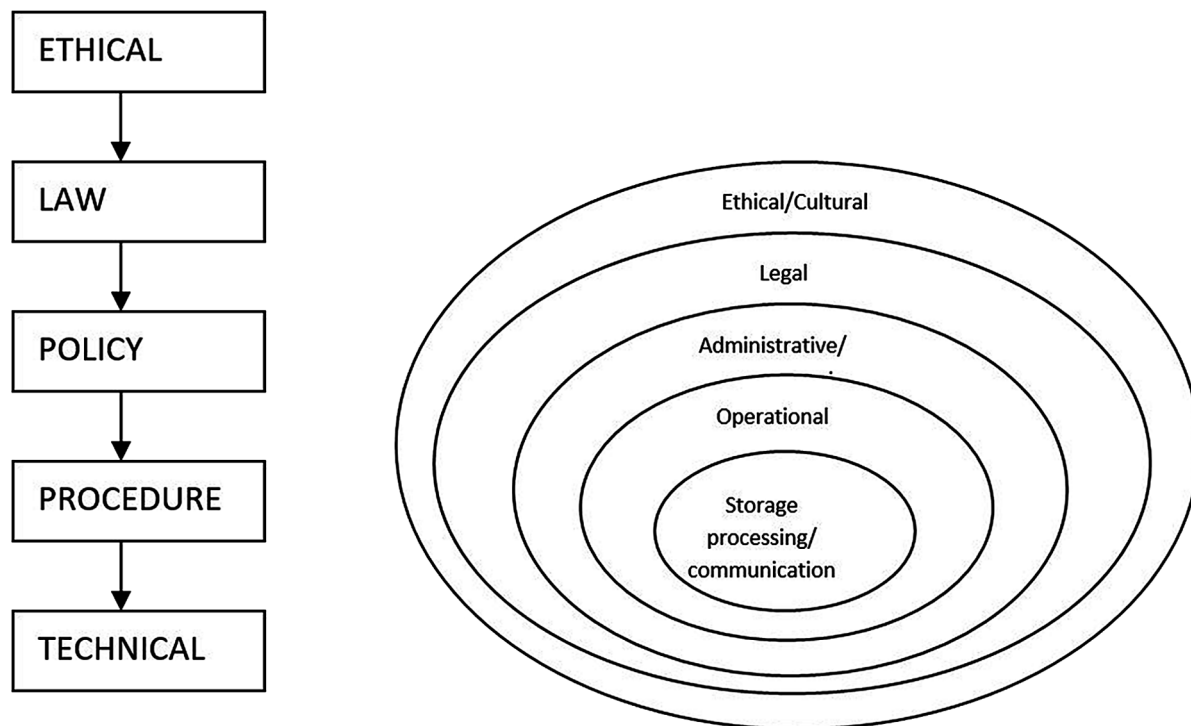
*Digital Forensic as it sounds coerce human mind primarily with exploration of crime. However in the contemporary world, digital forensic has evolved as an essential source of tools from data acquisition to legal action. Basically three stages are involved in digital forensic namely acquisition, analysis and reporting. Digital Forensic Research Workshop (DFRW) defined digital forensic as “Use of Scientifically derived and proven method towards the identification, collection, analysis, interpretation, documentation and presentation of digital evidence derived from digital sources for the purpose of facilitating or furthering the reconstruction of event to be criminal”. The hard problem in digital forensic is such that the acquired data need to be cleaned and is required to be intelligible for reading by human. As a solution to this complexity problem a number of tools are present which may be repeated until relevant data is obtained.*

### INTRODUCTION TO FORENSIC COMPUTING

Typically any company's top level deals with ethical/cultural considerations. These considerations directly map to the law on hand which in turn to be the policies. These policies generate procedures which lead to technical implementations (Figure 1).

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Figure 1.



An organizational view at its core part has storage processing where all information's are collected and stored using some storage devices. Required operations are performed over the collected data to discover any hidden information. Administrative concerns take the appropriate decisions according to the attorney suggestions based on the ethical and cultural moralities.

## NEED FOR DIGITAL FORENSIC

Today's world communication is through computers or any handheld devices over world wide web. Military secrets, banking, personal information exchange are conducted electronically. A study in the University of California has shown that more than 95% of all information generated in digital form. Among these only few documents that all exchanged over the internet are only and never could be printed on paper.

In the digital era, digital data is dominating the analog predecessors (Witten, Frank, & Hall 2000) but however, since the digital edit software is ubiquitous the authenticity of digital data faces a great challenge. It has aroused the suspicion on the reliability of digital data especially when the digital data renders to the court as the digital evidence. In order to make the judiciary verdict right and objective the probability of the digital evidence produced is expected to be the accurate one.

Digital Forensic as it sounds coerce human mind primarily with an exploration of a crime. However in the contemporary world, digital forensic has evolved as an essential source of tools from data acquisition to legal action. Tampering is done long back where Photoshop can do wonders. Trust in these photographs are the major point of research where authentication has to be provided.

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