

# COE589: Digital Forensics

## Overview and Logistics

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# Digital Forensics

- **Forensic Science:** Applying science for the purpose of law
  - solve crimes
  - dealing with weapons, blood, fingerprints,
- **Digital Forensics:** Forensics in the digital world
  - obtaining and analyzing digital information
  - bringing evidence in civil, criminal, or administrative cases
- originated as **computer forensics** (80's)
  - all devices capable of storing digital data

# Digital Forensics

Forensics Science

Digital Forensics

...

computer  
forensics

mobile  
forensics

network  
forensics

# Why Digital Forensics is important?



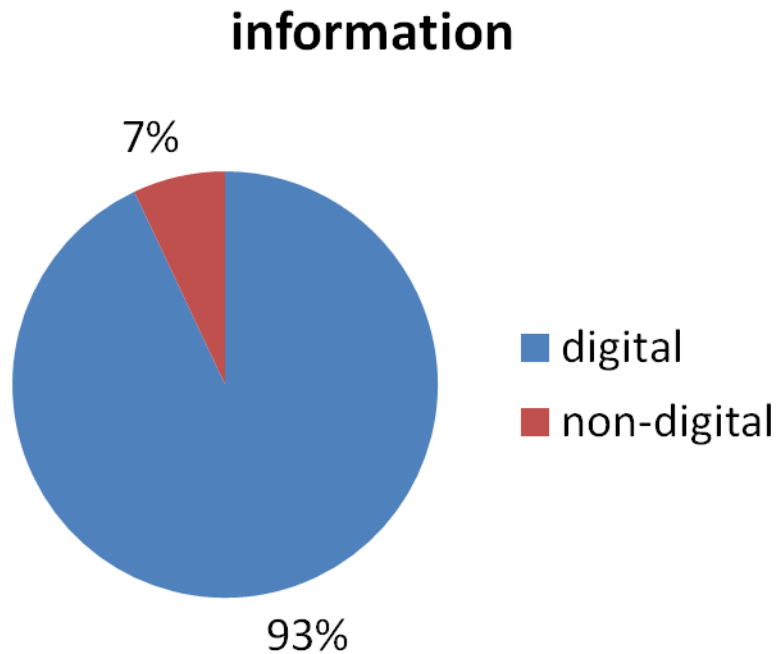
- **crime** scenes increasingly involve digital devices
  - traditionally deal with physical evidences: weapon, blood, fingerprints
  - cybercrimes: Fraud, child pornography,
- not just crimes; internal **investigations** as well

# Digital Evidences everywhere



- **DF enabler** is digital world of communications and activities
- digital **traces** are everywhere (very hard to destroy!)
  - computers, PDAs, cellular phones, videogame consoles, digital cameras, copy machines, printers, etc...

# Digital World



- 93% of information created, modified and consumed entirely in digital form (UC-Berkeley 2001)
  - spreadsheet,
  - databases
- social networking
  - forums
  - twitter
  - facebook

# Computer/Network Attacks

- Malware
  - viruses, Trojans, etc.
- Industrial attacks (Aramco)
- Hacktivism
  - hacking for political reasons
- Mobile malware
- Spam
- ....



# Computer Crimes are Expensive

GMT

## UK cyber crime costs £27bn a year - government report

Cyber crime costs the UK economy £27bn a year, the government has said.

**The figures, published for the first time,** are a mid-range estimate and the real cost could be much higher.

They are made up of £21bn of costs to businesses, £2.2bn to government and £3.1bn to citizens.



Cyber crime is seen as a growing problem

Security minister Baroness Neville-Leech said the

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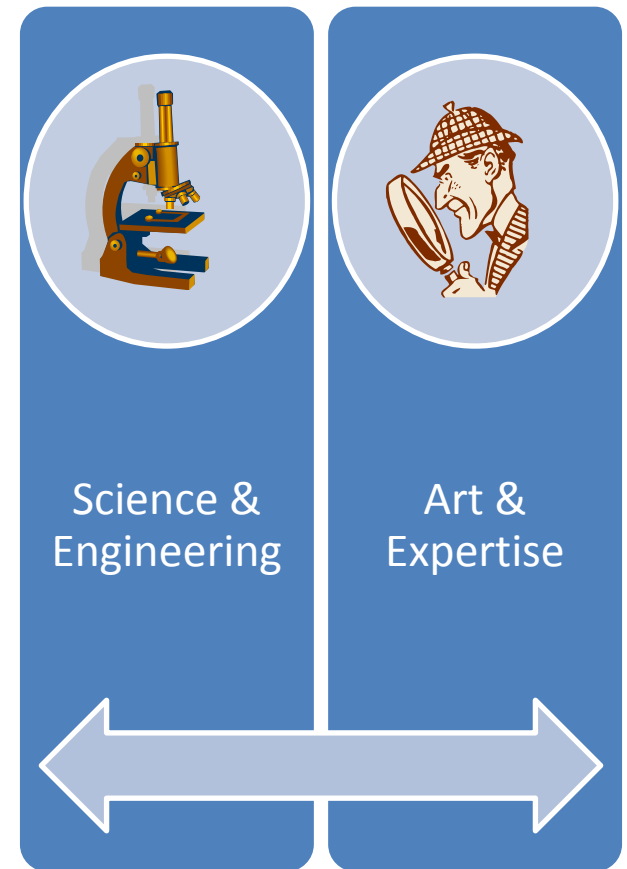
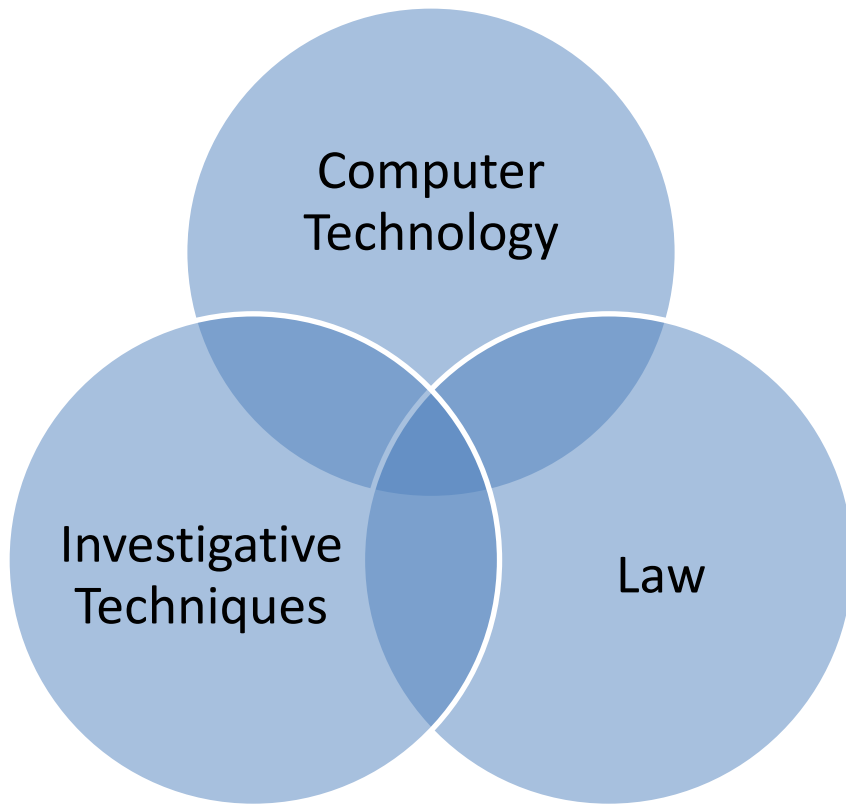


# Digital Forensics Saves Life

- In 2004, Bobbie Jo Stinnett was murdered and her unborn baby “kidnapped”
- Police examined her computer and traced an IP address to Lisa Montgomery
- Montgomery had corresponded with Stinnett over the Internet



# Digital Forensics Multi-disciplinary



# Why Should You take this course?

- Learn about Digital Forensics
  - hot area
- Learn to conduct research in Digital Forensics
  - Pick a topic for your MS/PhD thesis
- Learn to conduct research in general
  - effective paper reading
  - technical paper writing

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<http://www.ccse.kfupm.edu.sa/~ahmadsm/coe589-122/coe589.html>