INCS-712: Digital Forensics

Group Projects: Research Directions

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Agenda

❑ **Crime Scenes**
  ▪ Physical
  ▪ Digital
  ▪ Virtual

❑ **Digital Forensic Process**
  ▪ Activities
  ▪ Methodology
  ▪ Limitations

❑ **Case Study - IoT**
  ▪ Need for IoT Forensic
  ▪ IoT Forensic Challenges
  ▪ IoT Forensics Opportunities

Research Directions - Process & Tools

Digital Forensic Investigation Process

Digital Forensic Readiness

Digital Forensic Examination and Analysis

Quality and Legal Standards for Digital Forensics

Digital Forensic Tools

Digital Forensic Identification and Acquisition Tools

Digital Examination and Analysis Tools

Dynamic Malware Analysis

Android Malware Analysis

IOS Malware Analysis

Research Directions - Domains

Network Forensics

Tools and Techniques

Case Studies / Research Challenges

Cloud Forensics

Tools and Techniques

Case Studies / Research Challenges

IoT Forensics

Tools and Techniques

Case Studies / Research Challenges

Research Directions - Domains

API Forensics

Tools and Techniques

Case Studies / Research Challenges

Mobile Forensics

Tools and Techniques

Case Studies / Research Challenges

Smartphone Forensics

Tools and Techniques

Case Studies / Research Challenges

Research Directions - Sectors

Digital Forensics in Criminal Investigations

Criminal Pattern Detection using Data Mining

Criminal Analysis and Prediction using Machine Learning

Criminal Network Analysis using Machine Learning

Digital Forensics in Financial Investigations

Financial Crime Detection

Digital Forensics for Social Media

Social Media Forensics for Android Devices

Social Media Forensics for IOS Devices

Social Media Forensics for Windows Devices

Research Directions - AI & Data Science

AI-Driven Forensic Approaches

Tools and Techniques

Case Studies / Research Challenges

Big Data Forensics

Tools and Techniques

Case Studies / Research Challenges

Deepfake Forensics

Tools and Techniques

Case Studies / Research Challenges