Advanced Video Forensics

Module Information

2022.01, Approved

Summary Information

Module Code	7116AMP
Formal Module Title	Advanced Video Forensics
Owning School	Engineering
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

Learning Methods

Learning Method Type	Hours
Lecture	20
Practical	25
Tutorial	5

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-CTY	CTY	January	12 Weeks

Aims and Outcomes

Aims	To provide students with the theory, processes and techniques in the emerging field of Video ForensicsTo equip the student with knowledge and understanding to critically analyse, select and apply appropriate techniques to transcode, authenticate, enhance, interpret and report on forensic media investigationsTo foster an environment that encourages self-reliance, professionalism and promotes continuous learning, self-development and promotes a culture that acts to deal with the various potential forms of bias can have on the interpretation of results within the evidence chain

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Recognise, specify, setup and calibrate common video capture and interrogation equipment
MLO2	2	Critically appraise video materials obtained from a variety of common digital and analogue sources
MLO3	3	Use advanced techniques to investigate, process, interpret and reconstruct forensic video materials to recognised standards using a variety of tools
MLO4	4	Explain and report the procedures completed in a professional and accessible manner

Module Content

Outline Syllabus	Advanced measurement scales tools and techniquesAdvanced video visualisation tools charts and techniquesAdjustment for camera variationStrategies and limitations of video capture equipmentAdvanced spectrographic video analysis and interpretationForensic application of digital video processingGOP analysisMotion vectorsAdvanced video enhancement and authentication techniquesRecognizing video forgery using HEX and EXIFFrame averaging techniquesAnalogue video systems and transfer techniquesAnalogue transcodingAdvanced video authentication enhancement and interpretation techniquesAdvanced forensic video interpretation methodology and calculationsPreparation of documentation for such casesForensic video reporting and evidence for cross examination
Module Overview	This module builds on the Basic introductory knowledge accumulated in previous modules and will provide students with a thorough understanding of the advanced practical theory, skills, processes and procedures pertinent to their current /potential role as Video Forensic Specialist. The focus will be on many common real-life situations although there may be scope to further specialise in specific areas of the field. The Syllabus involves applying the Video Forensic process chain appropriately with a keen awareness of the risks and implications associated with the standards and processes required for each procedure. The training is completed to a level of competence where the student is able to defend materials in court.
Additional Information	This module will provide students with a thorough understanding of the advanced practical theory, skills, processes and procedures pertinent to their current /potential role as Video Forensic Specialist. The focus will be on many common real-life situations although there may be scope to further specialise in specific areas of the field.The Syllabus involves applying the Audio Forensic process chain appropriately with a keen awareness of the risks and implications associated with the standards and processes required for each procedure:1. Capture/ Duplication/Handling of files from original format in professional manner2. Transfer of authenticated files to digital analysis software3. Manipulation and Interpretation of Audio files in Analysis Software for forensic investigation purposes4. Documentation and Reporting completed to a level of competence where the student is able to defend materials in court

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Practice	Practical	30	0	MLO1, MLO2

| Presentation | Report | 70 | 0 | MLO1, MLO2, MLO3, MLO4 |

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Colin Robinson	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings