

Analysis of Digital Media

Spring 2008

Overview

Overview

The primary focus of the course is to explore and understand forensic uses of digital media including images, sound and video.

We will examine aspects of digital media with an emphasis on understanding the advantages and limitations of using digitally produced data. We will examine the various ways digital data can be enhanced and procedures to ensure proper handling and presentation. We will be using a variety of software that at times will be challenging and confusing to some. Don't despair. We wish to establish a basic set of skills that will be foundational in advancing our understanding and use of digital media.

Textbook

Forensic Uses of Digital Images - John C. Russ

Software

Adobe Elements or Photoshop, Audacity and AvidFreeDv

Additional Reading Material

Articles and pertinent web links

Grading and attendance policy is covered on the rubric

Objectives

- 1) Understand the different types and uses of forensic digital media.
- 2) Establish a working knowledge of the software used to examine digital media.
- 3) Examine and practice techniques used to analyze and enhance images, sound and video.
- 4) Study the acceptable professional and legal practices involving capture, storage, examination and presentation of digital media.

Disabilities

If you believe that you have a disability requiring accommodations in this class, please contact the Coordinator of Support Services for Students with Disabilities as soon as possible. After you receive your accommodation form, please see me so I can work with you to implement them in a timely fashion.

Contact:

Allyson Krings, Coordinator of Support Services for Students with Disabilities
Office: Hauke 007-I; Phone: 802-651-5961; Email: krings@champlain.edu

Analysis of Digital Media (Spring 2008)

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Schedule

1 Course Overview

Digital image Overview

Uses of Digital images

2 Digital Image Overview

The eye, analog and digital capture • Tonal and spatial resolution • Image enhancement and degradation • Properties of Color models • Image Software Introduction

3 Digital Photography

Chain of control and archive techniques • Digital Video • Scanners • How to take good pictures • Pictures in the courtroom

4 Processing Techniques (assignment)

Noise reduction and filtering techniques

5 Processing Techniques (Quiz)

Methods of adjusting/balancing images

6 Image Enhancement

Detail enhancement • Sharpening • Filtering techniques

7 Image Enhancement (assignment)

Noise reduction • Using and detecting compression • Maintaining records • Forgeries

8 Subject Identification (Quiz)

Surveillance video • Recording problems • Resolution problems • Image restoration • Identifying faces

9 Introduction to Steganography

10 Digital Audio Overview (assignment)

Role of the expert witness • Court standards for expert witness

11 Digital Audio Overview (Quiz)

Forensic uses • Compression • Filtering • Software/Equipment

12 Digital Video Overview

Forensic uses • Editing • Enhancement • Compression • Software/Equipment *
Compression • Software/Equipment

13 Digital Video and Forensic Animation

14 Course Review and Class Project

15 Final

Attendance Policy

Participation is a very important part of your grade. Attendance is measured through your presence and involvement within the WebCT learning management system. Your participation in discussion boards (both reading and posting) is required. In general, you should plan to access the WebCT environment at least 3 times per week.

Academic Honesty

"In the preparation and presentation of any assigned work-including examinations, tests, quizzes, term papers, reports, themes and other written or oral exercises-every student shall conform to a strict standard of academic honesty. Any attempt to deceive a faculty member or to help another student to do so will be considered a violation of this standard. In all assignments, students must acknowledge the words and/or ideas of others taken from print or electronic media, whether a direct quotation or a paraphrase; any omission of this is dishonest. Cheating on examinations or tests consists of knowingly giving, receiving or using-or attempting to give, receive or use-unauthorized assistance during an examination or test. A faculty member may record a grade of "zero" for any assignment on which a student has plagiarized or cheated. For repeat offenses within a single course, the faculty member may record a grade of "F" for the course. Violations of this policy in multiple courses may result in dismissal from the College. A student may appeal these decisions according to the Academic Grievance Procedure."

Methods of Evaluation

Graded Elements	Weights
Understanding demonstrated in assignments	25
Quiz 1	10
Quiz 2	10
Quiz 3	10
Final	20
Participation in discussions	25
Total	