Homework 1

Quiz, 8 questions

1 point

1.
Which of the followings are digital signals? Check all that apply.

- [ ] text messages received on a cellphone
- [ ] videos streamed from online sources
- [ ] sound tracks stored on a CD
- [ ] pencil drawing made on a piece of paper
- [ ] an x-ray film image

---

1 point

2.
Functional magnetic resonance imaging (fMRI) is a technology where volumetric scans of the brain are acquired while the subject is performing some cognitive tasks over time. Based on this description, what is the dimensionality of fMRI output signals?

- ( ) 1D
- ( ) 2D
- ( ) 3D
- ( ) 4D
- ( ) More information is needed to answer this question

---

1 point

3.
True or false: All digital images are visible, i.e., they are all captured with visible light.

- ( ) true

false

Homework 1

Quiz, 8 questions

1 point

4.

Digital videos are signals that are discrete in time.

- true
- false

1 point

5.

Which of the following are examples of electromagnetic (EM) waves? Check all that apply.

- [ ] microwave
- [ ] ripples in a lake
- [ ] sound wave
- [ ] light from the sun

1 point

6.

True or false: Digital image processing is a subject distinctly different from computer vision.

- true
- false

1 point

7.

Approximately, how many different 100x100 binary digital images exist? How many 24bit-RGB color images of the same size exist? (Hint: for binary images each pixel can assume one of two values; for 24bit-RGB color images each pixel has three color channels and each color channel can assume one of 256 values.)

2^{10000} for binary images and $2^{24\times10000}$ for 24bit-RGB color images

Homework 1

Quiz, 8 questions

2^{100} for binary images and $2^{24\times100}$ for 24bit-RGB color images

100^2 for binary images and 100^{24} for 24bit-RGB color images

10000^2 for binary images and 10000^{24} for 24bit-RGB color images

Infinitely many for both binary and 24bit-RGB color images

---

1 point

8.

Suppose your smart phone has a 10-megapixel camera (1 megapixel = 10^6 pixels). Without any form of compression, how big would a 24bit-RGB color image be? (Hint: 1 byte = 8 bits)

30 megabytes

10 megabytes

300 kilobytes

more information is needed to answer this question

I, **Chinmay kumar Das**, understand that submitting work that isn't my own may result in permanent failure of this course or deactivation of my Coursera account.

Learn more about Coursera's Honor Code

Submit Quiz