



## Certificate of Achievement

# Matthias Giger

has completed the following course:

### REPRESENTING DATA WITH IMAGES AND SOUND: BRINGING DATA TO LIFE RASPBERRY PI FOUNDATION AND NATIONAL CENTRE FOR COMPUTING EDUCATION

This online course from the Raspberry Pi Foundation explored how computers do interesting things with data. It included character encoding, how images can be represented as bitmaps or vectors, and how sounds are sampled and represented digitally. It also covered the basics of compression.

3 weeks, 2 hours per week



**Dr Sue Sentance**  
Chief Learning Officer  
Raspberry Pi Foundation



The person named on this certificate has completed the activities in the attached transcript. For more information about Certificates of Achievement and the effort required to become eligible, visit [futurelearn.com/proof-of-learning/certificate-of-achievement](https://futurelearn.com/proof-of-learning/certificate-of-achievement).

This learner has not verified their identity. The certificate and transcript do not imply the award of credit or the conferment of a qualification from Raspberry Pi Foundation and National Centre for Computing Education.



Raspberry Pi



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#### **STUDY REQUIREMENT**

3 weeks, 2 hours per week

#### **LEARNING OUTCOMES**

- Describe how computers represent text, images and sound in binary
- Explain how text is represented digitally by using common text encoding (ASCII and UTF-8)
- Produce your own emoji in bitmap and vector form
- Investigate the physics of sound, and how sampling allows computers to represent sounds
- Compare lossy and lossless compression

#### **SYLLABUS**

- Units of information
- Character encoding
- Representing images
- Representing sound
- Data compression