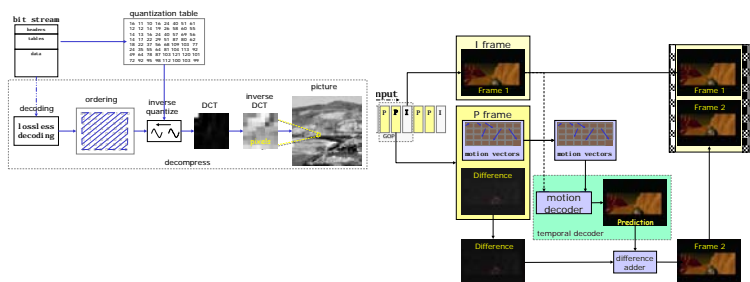


## Image Processing training

### Benefits

- Understand media bit-streams
- Know how MPEG relates to the stream
- Know basics of video compression
- Know basics of audio compression
- Know how to analyze a bit-stream



### Streaming Media

Streaming Media is all about the stream, yet most courses treat it as video or audio processing. In this class we do introduce the tools of MPEG compression but with a focus on how they affect the bit-stream.

#### Class aims

The end result of this class is that you will know how an MPEG bit-stream is constructed, be able to analyze such a stream, and understand the basic objects that are represented in the stream.

#### Class topics

The class covers MPEG bit-stream encoding, introducing and explaining the processes and tools that are used to create the stream from that streaming viewpoint.

- Streaming Media
- Broadcast and Internet streams
- Streaming pipelines
- Perceptual vision and color
- Perceptual compression
- Color sub-sampling
- Video stream data formats
- Video compression
- Motion compensation
- B-Frames
- H.264
- MPEG bit-streams
- Transport and Program streams
- Packet multiplexing
- Stream Headers and Packets
- Clocks and Synchronization

### Streaming Media

Streaming applications and the concept and implementation of the bit-stream.

- Streaming Media
- Broadcast and Internet streams
- Streaming pipeline models

#### Vision and color

Color and color spaces.

- Color vision and color spaces
- Color sampling and sub-sampling

#### Compression

JPEG and MPEG compression.

- Video bandwidths
- Video formats and pixels
- Perceptive compression
- JPEG and MPEG
- Difference coding
- Motion compensation
- MPEG Layers and Levels
- B-Frames
- H.264
- Profiles, Levels and Verifiers

#### Bit-streams

- MPEG bit-streams
- Broadcast streams
- Packetized streams
- Program and Transport Streams
- Stream Headers
- Program Association Tables
- Program Map Tables
- Stream de-multiplexing

#### Synchronization

- Audio/video synchronization
- Synchronization windows
- Clocks and latency
- Trick modes

### Target audience

This class is aimed at programmers, engineers and managers who need to analyze and check MPEG bit-streams and who wish to fully understand what they are seeing.

#### Time and arrangements

This class takes 5 days. Check our schedule at:

[www.bores.com/index\\_schedule.htm](http://www.bores.com/index_schedule.htm)

It can also be presented 'on site' by special arrangement and the material can be adapted if you have specific needs.

#### Booking and questions

Call us by phone or send an email to book or to ask questions:

- contact Dr Chris Bore
- mobile +44 7921 153219
- email: [chris@bores.com](mailto:chris@bores.com)

#### About Us

BORES Signal Processing train managers, engineers and programmers to understand and use DSP and streaming media processing.

- established 24 years
- excellent reputation
- worldwide activities
- [www.bores.com](http://www.bores.com)