Video Editing

Presented by the Media Creation Lab

Contents

1. Hardware

Software works as well as hardware allows

1.1. Hardware Concepts

- **CPU:** Speed of tasks (Ghz)
- **Cores (of CPU):** Efficiency/number of tasks
- **RAM (Memory):** Complexity of tasks (GB)
- **Storage:** Amount of saved content (GB, TB)
- **GPU (or video/graphics card):** Complexity of imagery

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1.2a. Know Your Hardware: PC

1. Type ***"System Information"*** into Windows taskbar
2. Open ***System Information*** app

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1.2b. Know Your Hardware: Mac

1. Click Apple icon in menu bar
2. Click ***About This Mac***

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Compare your hardware specs with the minimum & recommended requirements.

2. Software

A few dominant products

2.1. Premiere (Adobe)

- Traditional industry standard
- Adobe Creative Suite (After Effects, Audition, etc)
- Trial: 7 days
- Fee: $26/month for first year, $39/month thereafter

2.2. iMovie (Apple)

- Proprietary software for iOS & macOS
- Fee: N/A (free with Mac/Macbook)

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2.3. Final Cut Pro (Apple)

- Proprietary software for macOS
- Trial: 90 days
- Fee: $400

2.4. DaVinci Resolve (Blackmagic)

- Emerging standard
- Self-contained suite (tabs at bottom of UI)
- Trial: Unlimited for Resolve
- Fee: $425 for Resolve Studio

2.5. Other Software

- Adobe Premiere Rush
- HitFilm
- OpenShot Video Editor
- Vegas Pro

3. Standards

Common numbers & letters

3.1. Video Concepts

- **Resolution:** Number of pixels in frame (image)
  - More pixels = more detail
- **Aspect ratio:** Width-to-height
  - 16:9 common for displays
- **Scan:** Refresh entire frame or alternating lines in frame
  - *Progressive (p)* or *interlaced (i),* respectively
- **Frame rate:** Number of frames per second (FPS)
  - Most common: 30 FPS, 60 FPS

(Adobe, n.d.)

3.2. Video Resolutions

- **720p** (HD): 1280 x 720 pixels
- **1080p** (full HD): 1920 x 1080 pixels

- **2K:** 2048 x 1080 pixels
- **QHD** (quad HD): 2560 x 1440 pixels
- **UHD** (ultra HD): 3840 x 2160 pixels
- **4K:** 4096 x 2160 pixels
- **8K:** 7680 x 4320 pixels
- **16K:** 15360 x 8640 pixels

(Adobe, n.d.)

It's better to *go down* in resolution than *up* (in general).

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3.3. Video & Audio Formats

- **Video:**
  - MP4 recommended for modern publishing
  - AVI or MOV recommended for preservation

- **Audio:**
  - MP3 recommended for modern publishing

4. Anatomy

Common forms/structures

4.1. Main Anatomy: User Interface

- **Menu bar:** Most actions/commands & elements
- **Media pool:** All files available for current work
- **Playback viewer:** Image/video of current work
- **Toolbars:** Icons of actions for playback, editing, view
- **Tabs/Toggles:** Open/close panels for effects, modifiers
- **Timeline:** Entire duration of work
- **Canvas:** Lanes (layers) for audio/video
- **Properties panels:** Form elements to adjust parameters

Many apps let you
customize their UI elements.

4.2. Special Anatomy: Timeline

- **Playhead:** Vertical line showing current point in timeline
  - *Scrubbing:* Clicking & dragging playhead
- **Skimmer (if applicable):** Position of cursor
  - *Skimming:* Moving cursor along timeline/lanes

4.3. Special Anatomy: Canvas

- **Video lanes:** Higher position = higher precedence
- **Audio lanes:** Audio as waveforms
- **Markers:** User-set on individual lanes
- **Contextual-actions menu:** Right-click on lane

4.4. Information Organization: Level 1

- Top-level (proprietary) data-container, saved to storage
- Has links to imported media files (originals/copies)
- Vocabularies:
    - Premiere: Project
    - iMovie & Final Cut: Library
    - Resolve: Project

4.5. Information Organization: Level 2

- Container within top-level container
- Can have sibling containers (same level)
- Vocabularies:
  - Premiere: N/A
  - iMovie & Final Cut: Event
  - Resolve: N/A

4.6. Information Organization: Level 3

- Container with audio/video lanes
- Can have sibling containers (same level)
- Exported as files in standard formats (e.g., MP4)
- Vocabularies:
  - Premiere: Sequence
  - iMovie & Final Cut: Project
  - Resolve: Timeline

4.7. Information Organization: Review

- Level 1 / Level 2 / Level 3
    - Premiere: Project / (none) / Sequence
    - iMovie & Final Cut: Library / Event / Project
    - Resolve: Project / (none) / Timeline

- Metaphor: Academic year / Course / Assignment

- Premiere & Resolve: Bins (optional) at Level 3
    - Bins: Optional folders/filters for media files

5. Actions

Knowing how to do, knowing how to know

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5.1. Different Methods

1. **Menu bar**
   - e.g. *Edit*, *Trim*, *Clip*, *View*, *Window*, *Help*
2. **Contextual-actions menus**
3. **Toolbars**
4. **Keyboard shortcuts**

5.2. Keyboard Shortcuts: Playback

- **Spacebar:** Play/pause/resume
- **K:** Stop (freezes playhead)
- **J:** Play reverse; press again to increase speed
- **L:** Play forward; press again to increase speed
- **K (hold) + L, or Right:** Go to next frame
- **K (hold) + J, or Left:** Go to previous frame
- **Up / Down:** Skip to start / end of current clip
- **M:** Set marker on lane/timeline at playhead's position

5.3. Sense-Making: Strategies

1. **Toolbars:** Icons convey use, tool-tips show labels
2. **Menu bar:** Contains actions organized into categories
3. **Contextual action-menus:** List applicable actions
4. *Help* **menu:** Highlight actions in menu bar, if applicable
5. **Web search**

6. Physiology

Common functions/actions

6.1. Creating Data-Containers

1. *File* -> *New* -> *[Level 1 container]*
2. (If applicable) *File* -> *New* -> *[Level 2 container]*
3. *File* -> *New* -> *[Level 3 container]*

- Level 1 / Level 2 / Level 3
    - Premiere: Project / (none) / Sequence
    - iMovie & Final Cut: Library / Event / Project
    - Resolve: Project / (none) / Timeline

6.2. Importing Files

1. *File* -> *Import* -> (if applicable) *Media*
2. Select file(s) to import
3. (Optional) Enable file-copying
4. Click import/open button

- Default: Create link to original file (must preserve)
    - Premiere: Option to copy to chosen location
    - iMovie: Copy within Library (Level 1)
    - Final Cut: Option to copy within Library

6.3. Adding Clips to Canvas

1. Drag file(s) from file pool to canvas
2. (Optional) Drag to different lane
3. (Optional) Split audio and video from audio-video file
   a. Menu bar
   b. Contextual-action menu

6.4. Trimming Clips: Edge Drag

1. Enable **selection** tool/mode (arrow icon)
   a. Premiere: *V*
   b. Final Cut: *A*
   c. Resolve: *A*
2. Move cursor to edge of clip (watch for cursor change)
3. Click & drag edge of clip inward

- iMovie: Skip Step 1

6.5. Trimming Clips: Split & Delete

1. Enable **blade** tool/mode (razorblade or scissors icon)
   a. Premiere: ***C***
   b. Final Cut: ***B***
   c. Resolve: ***B***
2. Click lane of clip at desired split-point
3. Enable selection tool (arrow icon or KB shortcut)
4. Select sub-clip and delete (Backspace key vs Delete key)

- iMovie: ***Modify*** -> ***Split Clip*** (skips Steps 1-2)

(continued)

- Use keyboard shortcut to skip Steps 1-3
  - Premiere: **Ctrl** + **K** or **Cmd** + **K** (split at playhead)
  - iMovie & Final Cut: **Cmd** + **B** (split at skimmer)
  - Resolve: **Ctrl** + **B** or **Cmd** + **B** (split at playhead)

6.6. Adding Transitions

1. Open browser for effects/transitions
   a. Premiere: **Window** -> **Effects**
   b. iMovie: **Transitions** tab (top of UI)
   c. Final Cut: **Transitions** icon (rightmost, near timeline)
   d. Resolve: **Effects** tab (top-left of UI)
2. (If applicable) Open relevant sub-folder within browser
3. Drag transition-preset onto split-point in lane

6.7. Adding Titles/Text

1. Open browser for titles/text
   a. Premiere: ***Graphics and Titles*** -> ***New Layer*** -> ***Text***
   b. iMovie: ***Titles*** tab (top of UI)
   c. Final Cut: ***T*** icon (top-left of UI)
   d. Resolve: ***Effects*** tab (top-left of UI)
2. (If applicable) Open relevant sub-folder within browser
3. (If applicable) Drag title-preset onto topmost lane

- Premiere: Skips Steps 2-3

6.8. Editing Titles/Text

1. (Recommended) Zoom out playback-viewer
2. Double-click text-container (opens properties panel)
3. Select **sans-serif** typeface/font
   - Avoid **serif** typeface/font
4. Select size for readability in smaller viewing area
5. (Recommended) Set text to light colour
6. (Recommended) Set **stroke** (outline) to dark colour
7. (Optional) Drag edges of text container as needed

6.9a. Exporting: Premiere

1. Click ***Export*** tab (top of UI)
2. Adjust settings as needed
3. Click ***Export*** button (bottom-right of UI)

6.9b. Exporting: iMovie

1. *File* -> *Share* -> [option]
2. Adjust settings as needed
3. Click *Next*
4. Choose location and filename
5. Click *Save*

- Alternative to Step 1: Click Share icon (top-right of UI)

6.9c. Exporting: Final Cut

1. *File* -> *Share* -> [option]
2. Adjust settings as needed (*Settings* tab)
3. Click *Next*
4. Choose location and filename
5. Click *Save*

- Alternative to Step 1: Click Share icon (top-right of UI)

6.9d. Exporting: Resolve

1. Click *Deliver* tab (rocket-ship icon, bottom of UI)
2. Adjust settings as needed (left-side panel)
    - Enable *Export Video* checkbox
3. Click *Add to Render Queue* button (bottom-left of UI)
4. Choose location and filename
5. Click *Save*
6. Select file(s) in queue (right-side of UI)
7. Click *Render* button

7. Audio

'Visual is two-thirds audio'

7.1. Audio Concepts

- **Volume:** Measurement in decibels (dB)
- **Peak:** Max volume of audio source within some period
- **Gain:** Change to volume (dB)

- Ideal-peaks vary
  - Primary/foreground audio: -12 dB to -6 dB
  - Secondary/background audio: -24 dB to -18 dB

7.2. Volume Levels/Meters

- **Meter:** Bars with coloured parts, includes peak-markers

- (Recommended) Enable meter including dB scale
    a. Premiere: Default
    b. iMovie: N/A
    c. Final Cut: ***Window*** -> ***Show in Workspace***
        -> ***Audio Meters***
    d. Resolve: ***Workspace*** -> ***Show Panel in Workspace***
        -> ***Meters***

7.3a. Adjusting Volume: Premiere

1. Select clip containing audio
2. ***Window*** -> ***Essential Sound***
3. Select audio tag (type) in ***Edit*** tab of ***Essential Sound***
4. (***Dialogue***) Adjust settings as needed
   a. ***Repair*** -> ***Reduce Noise***
   b. ***Clip Volume*** -> ***Level***

1. (Alternative) Right-click audio clip & select ***Audio Gain...***
2. Enter value in appropriate field & click ***OK***

7.3b. Adjusting Volume: iMovie

1. Select clip containing audio
2. Click volume tab (speaker icon, top-right of UI)
3. Adjust settings as needed
4. (Optional) Click noise reduction/equalizer tab (bar-graphs icon)
5. Adjust settings as needed

7.3c. Adjusting Volume: Final Cut

1. Select clip containing audio
2. Open Audio Inspector (speaker icon, top-right of UI)
3. Adjust settings as needed
   a. *Volume* slider
   b. *Audio Enhancements* -> *Voice Isolation*
   c. *Audio Enhancements* -> *Noise Removal*

7.3d. Adjusting Volume: Resolve

1. Select clip containing audio
2. Open ***Inspector*** panel (top-right of UI)
3. Select ***Audio*** tab
4. Adjust settings as needed
   a. ***Volume*** slider
   b. ***Dialogue Leveler*** -> ***Background reduction***

To record audio, ensure permission in your computer's (privacy) settings.

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7.4a. Recording Voiceover: Premiere

1. Set playhead at desired point
2. Choose lane for voiceover
3. Click mic icon in lane's toolbar
4. Talk into computer's selected input device
5. Click mic icon to stop recording

- Note: Voiceover replaces any overlapped audio in lane

7.4b. Recording Voiceover: iMovie

1. Set playhead at desired point
2. Select clip in canvas
3. Click mic icon below playback viewer
4. (Optional) Click Voiceover Options (sliders icon)
5. (Optional) Adjust options as needed
6. Click Record button (red circle icon)
7. Talk into selected input device
8. Click Stop Recording button (red square icon)

7.4c. Recording Voiceover: Final Cut

1. Set playhead at desired point
2. ***Window*** -> ***Record Voiceover***
3. (Optional) Adjust settings
4. Click Record button (red circle icon)
5. Talk into selected input device
6. Click Stop Recording button (red square icon)

7.4d. Recording Voiceover: Resolve

1. Open *Fairlight* **page** (musical-note icon, bottom of UI)
2. Right-click anywhere on track list (left side of UI)
3. Select *Add Track ...* -> *Mono* (recommended) or *Stereo*
4. In *Mixer* panel (right-side of UI), locate lane of new track
5. Click *No Input* button and select *Input ...*
6. In pop-up window, select input source (mic)
7. Click *Patch* button and close window
8. Enable *R* (arm-recording) button for new track
9. (Recommended) Enable *M* (mute) button for *Bus1* track

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10. Set playhead at desired point
11. Click Record button (circle icon) in toolbar
12. Talk into selected input source
13. Click Stop button (square icon)
14. Disable **M** button for **Bus1** track (prevents live-listening)

7.5. Music

- Use royalty-free or copyright-clear music
    a. Recordings of original performances
    b. Free/paid content services
    c. Permission from rights holders
- Recordings of songs (not songs themselves) copyrighted
    - 'Public domain' can be misleading concept

(Glendon Digital Media Lab, 2018d)

7.6. Captions/subtitles

- Avoid embedding captions within videos
  - Unfixable errors
  - Lack of viewer customization
- Services generate editable captions/subtitles
  - Microsoft Word for web
  - YouTube

8. Workflow

Spend time to save time

8.1. Working With Multiple Lanes

- Toggle lanes/clips using lane toolbars or KB shortcuts
  - Premiere: Eye icon (video); *M*ute, *S*olo buttons (audio)
  - iMovie: N/A
  - Final Cut: *S*elect clip and press *V*
  - Resolve: *S*olo, *M*ute buttons (audio)

8.2. Customizing Workspace

- Use default/preset or custom layout; save if possible
    - Premiere: **Window** -> **Workspaces** -> [option]
    - iMovie: [can't save custom layouts]
    - Final Cut: **Window** -> **Workspaces** -> [option]
    - Resolve: **Workspace** -> **Layout Presets** -> [option]

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8.3. Preparation

1. Organize files (descriptive names, folders for type/use)
2. Watch/listen to all clips
3. Start with end (length, mood, audience)
4. Develop story question for video to answer
   - Q: 'What can you do at the MCL?'
   - A: 'You can do a lot at the MCL' [show/tell]

(Glendon Digital Media Lab, 2018a, 2018b, 2018c; YouTube Creators, 2018)

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8.4. Process

1. Put all main clips into lane
2. Add audio clip(s)
3. Add **B-roll** clips; change shots every 3-5 sec
   - Longer periods (~15-20 sec) for longer videos
4. Watch footage
5. Trim/replace as needed
6. Watch footage again

(YouTube Creators, 2018)

9. Practice

Have fun

Practice Video

- Trailer/clip for MCL
  - Trimmed clip
  - Transition
  - B-roll
  - Title
  - Music
  - Voiceover
  - Adjusted volume

- Video with your footage

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