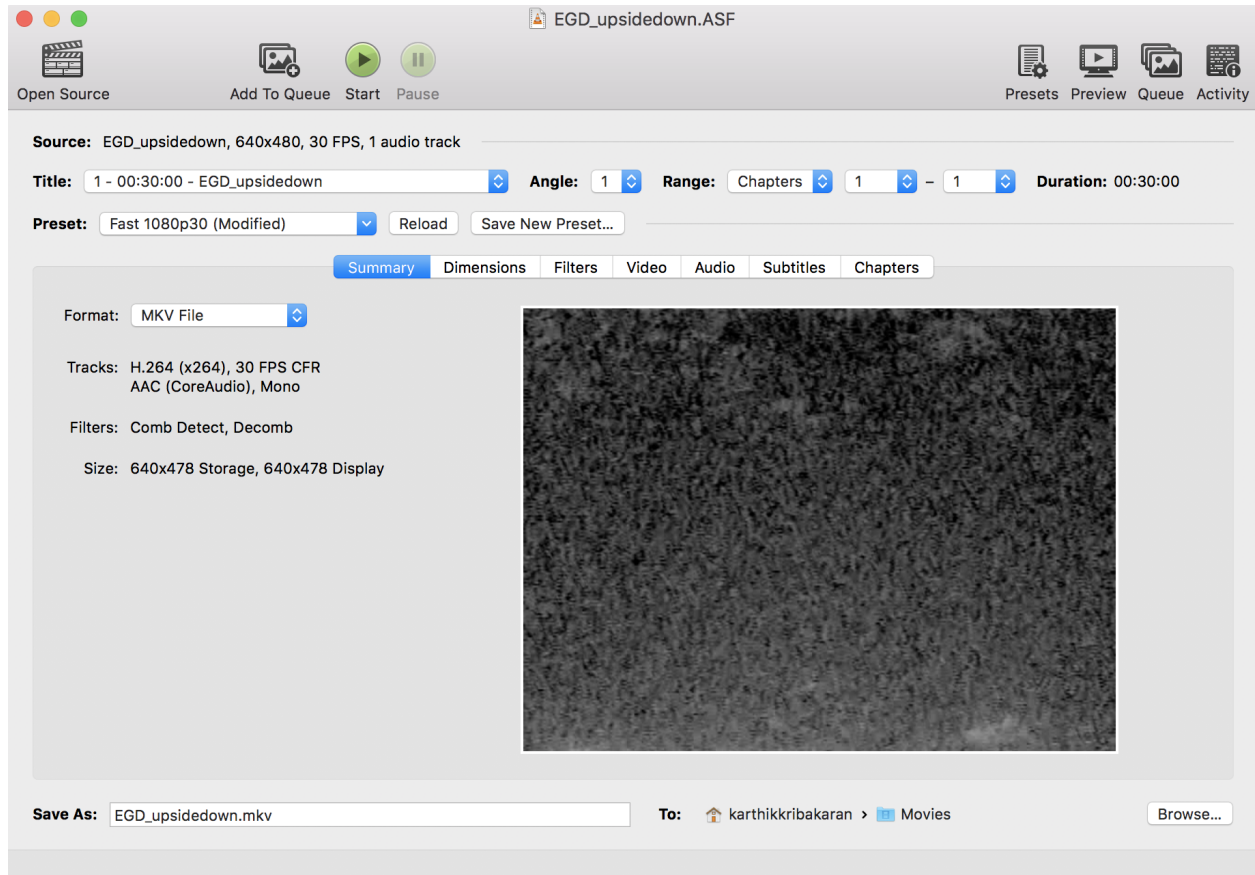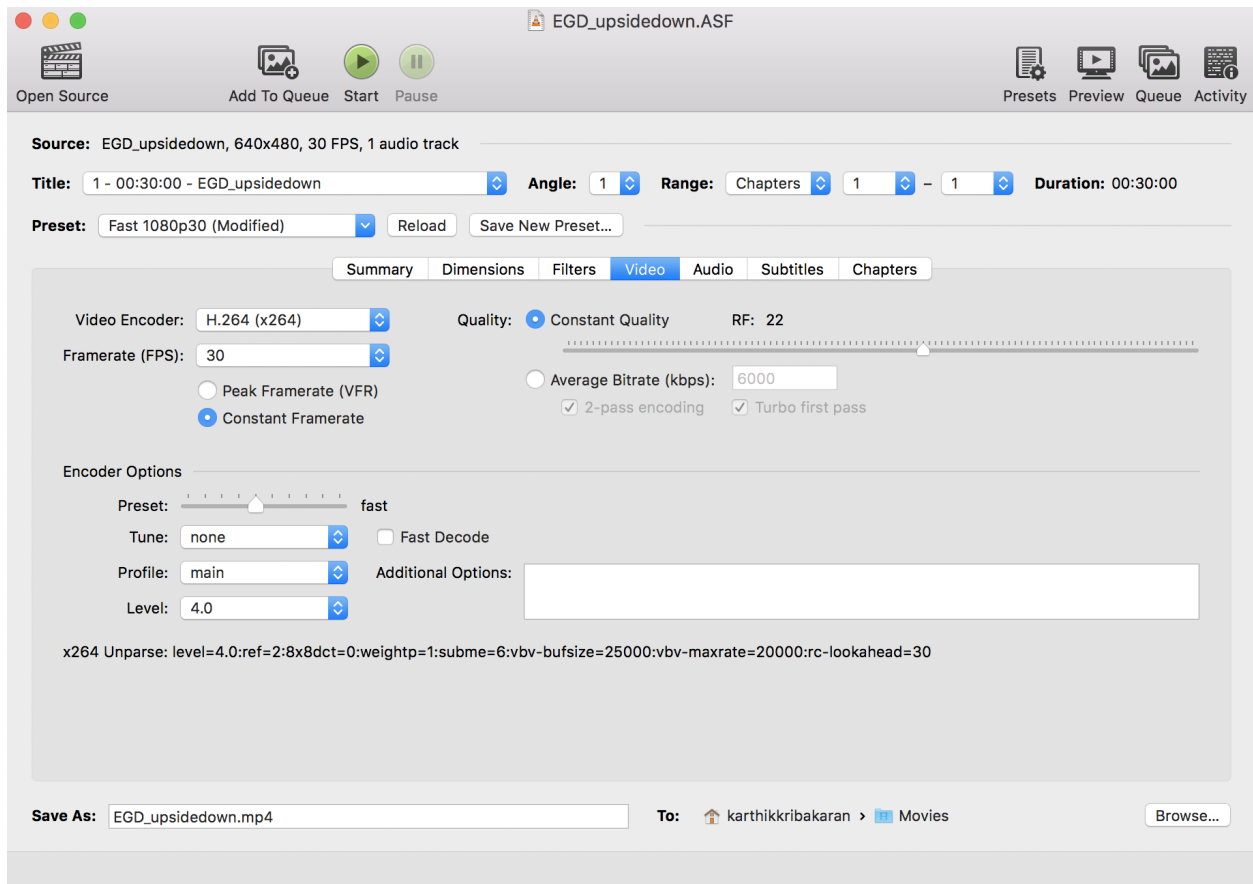# WALL-E Software Walk Through

Convert any to .ASF video files to .mkv

- Install Handbrake (video file format conversion software)
- Click "Open Source", select .ASF file you want to convert

- Select MKV as destination file format

- Check "Constant Framerate" in the "Video" tab

Python Information (Read this before the rest of the tutorial)
- Use Python version **2.7**
- Install the following dependencies:
  - OpenCV for Python
  - Pillow
    - pip install Pillow
- (info) Dependencies used that come with Python 2.7
  - NumPy
  - Tkinter

Clone our Git Repository

- In terminal:
  - `git clone https://github.com/vincentwangg/WALL-E`

Isolate Clip using Timestamp

- Use WALL-E/wall-e/utils_general/video_clip_generator.py to generate clips
  - in wall-e/ directory

- ○ run "`PYTHONPATH=. python utils_general/video_clip_generator.py <left_video_file_name> <right_video_file_name> frame -l <start_second> <end_second>`
- ○ `<start_second>` is the time the clip starts in seconds (e.g. 4:30 would be 270)
- ○ `<end_second>` is the time the clip ends in seconds (e.g. 4:50 would be 290)

Run GUI script (runs frame matching, stereo rectification)

- Using WALL-E/wall-e/pipeline1_gui.py
  - ○ Run "python pipeline1_gui.py"
  - ○ Follow the instructions through the interface
  - ○ Problem: Two videos aren't framed matched and stereo rectified
  - ○ Output: Stereo rectification map and/or stereo rectified and frame matched footage

Run Pipeline2 (pulse matches, and outputs 3D mapping results to text file) - Karthik

- ***Make sure you're in the directory ~/WALL-E/wall-e***
- run "`PYTHONPATH=. python pipeline2.py <left_video_file_name> <right_video_file_name> <baseline_distance>`"
- baseline should be in mm

Install Blender

- Tutorial
- Used to model 3D data

Import Pulse Data in to Blender

- https://github.com/vincentwangg/WALL-E/wiki/Blender