

Marc Siquier - Dataset Creation

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In [1]: from freesound import freesound
import random
import utils
from utils.run_entity_linking import spotlight
from IPython.core.display import display, HTML

# Get the API key from http://www.freesound.org/apiv2/apply/ (you'll need
# Freesound user account)
API_KEY='9GUfnpnadaFRpnB3v76G7M5x9i7X3tNHtZ2a4FrBb'
c = freesound.FreesoundClient()
c.set_token(API_KEY,"token")
```

1) Define a number of audio categories and find audio examples from Freesound for each category

```

In [2]: # Configure dataset parameters and audio categories
DATASET_NAME = 'broad' # Dataset will be saved in a .json file with this
name
DATASET_CLASSES = {
    # Must be dictionary with structure like {'class name': 'query terms
    ', 'class name 2': 'query terms 2',... }
    'Acoustic Guitar': 'acoustic guitar',
    'Electric Guitar': 'electric guitar',
    'Distorted Guitar' : 'distorted guitar'
}
N = 100 # Number of sounds per class
N_SOUNDS_PER_USER = 3 # Do not get more than 3 sounds per user

# Get sound examples from Freesound
dataset = dict()
for name, target_query in DATASET_CLASSES.items():
    print 'Getting sounds for class %s...' % name,

    # Get first page of results
    PAGE_SIZE = 150 # Page size for fs requests
    N_PAGES = int((N * 1) / PAGE_SIZE) # Number of pages to retrieve
    fields = "id,tags,description,username"
    results_pager = c.text_search(
        query=target_query,
        page_size=PAGE_SIZE,
        group_by_pack=1,
        fields = "id,tags,description,username,analysis",
        #descriptors = "lowlevel.mfcc.mean,lowlevel.barkbands.mean",
    )
    all_results = results_pager.results

    # TIP ON AUDIO FEATURES: you can get also audio features extracted i
n freesound by passing a 'descriptors'
    # parameter in the text_search function and including 'analysis' in
the fields list
    # (see http://www.freesound.org/docs/api/resources\_apiv2.html#respon
se-sound-list):
    #
    # fields = "id,tags,description,username,analysis"
    # descriptors = "lowlevel.spectral_centroid,lowlevel.barkbands.mean"
    #
    # e.g.: results_page = c.text_search(query=target_query, ..., fields
=fields, descriptors=descriptors)
    # ...

    # Get extra pages
    for i in range(0, N_PAGES):
        if results_pager.count > (i+1) * PAGE_SIZE:
            results_pager = results_pager.next_page()
            all_results += results_pager.results
    print len(all_results)
    # Get only N sounds max per user
    user_sounds_count = dict()
    filtered_results = list()
    random.shuffle(all_results) # Shuffle list of sounds (randomise ord
er)
    for result in all_results:
        if result["username"] in user_sounds_count:
            user_sounds_count[result["username"]] += 1
        else:
            user_sounds_count[result["username"]] = 1
        if user_sounds_count[result["username"]] <= N_SOUNDS_PER_USER:
            filtered_results.append(result)

    # Randomly select N sounds from al results obtained
    if len(filtered_results) >= N:
        selected_sounds = random.sample(filtered_results, N)
        dataset[name] = selected_sounds

```

```
Getting sounds for class Distorted Guitar... 150  
selected 100 sounds out of 106!  
Getting sounds for class Electric Guitar... 150  
selected 100 sounds out of 103!  
Getting sounds for class Acoustic Guitar... 150  
selected 100 sounds out of 137!
```

2) Explore the dataset (know your data!)

```
In [3]: # Load dataset from saved file  
DATASET_NAME = 'broad'  
dataset = utils.load_from_json('%s.json' % DATASET_NAME)  
N = len(dataset[dataset.keys()[0]]) # Number of sounds per class  
print 'Loaded dataet "%s" (%i classes, %i sounds per class)' % (DATASET_  
NAME, len(dataset.keys()), N)
```

```
Loaded dataet "broad" (3 classes, 100 sounds per class)
```

```
In [4]: # Pick some sounds from each category and show players (Freesound embeds
) to listen to them
for class_name, sounds in dataset.items():
    html = "<h3>%s</h3>" % class_name
    html += "<h4>Example sounds:</h4>"
    html += utils.generate_html_with_sound_examples([sound['id'] for sound in sounds][:6])
    class_tags = utils.get_all_tags_from_class(class_name, dataset)
    class_keywords = utils.get_all_keywords_from_class(class_name, dataset)
    html += "<h4>Most commons tags tagcloud:</h4>"
    html += utils.generate_html_tagcloud(class_tags, N=100, max_px=50, min_px=10, pow_scale=1.2)
    html += "<h4>Most commons keywords tagcloud:</h4>"
    html += utils.generate_html_tagcloud(class_keywords, N=100, max_px=50, min_px=10, pow_scale=1.2)
    html += "<br>"
    display(HTML(html)) # <- This is pure jupyter notebook AWESOMENESS magic which renders the HTML in the output of the cell
```

Distorted Guitar

Example sounds:

DrumLoop with guitbits.wav		②
-00:25	 Tristan	<div>loop</div> <div>drum</div> <div>distorted</div>
Stuttering Guitar Metal.wav		②
-00:08	 furbyguy	<div>distorted</div> <div>loops</div> <div>loop</div> <div>guitar</div> <div>beat</div> <div>drums</div>
Worthless Scavenger		②
-02:56	 edtijo	<div>reverb</div> <div>sad</div> <div>kick</div> <div>distorted</div> <div>Scavenger</div>
LoversRail-300.wav		i
-00:14	 visual	<div>distorted</div> <div>loops</div> <div>synthesizer</div> <div>effects</div>
metal insanity intro.wav		its
-00:27	 zagi2	<div>beat</div> <div>video-game-music</div> <div>bass</div> <div>progressive</div>
RBShortout.aif		i
-01:14	 be-steele	<div>electric-guitar</div> <div>abstract</div> <div>distorted</div> <div>resonant</div>

Most commons tags tagcloud:

reese beat mangled overdriven harmonics Noise n slide loops grit music kick guitar reverb
 chord Riff mosh-pit melodic drums remix guitar-chords heavy-metal muted power-chord drumloop death
 processed electro distorted soundtrack Loop electric distortion Harmonics
 virus distort overdrive thrash percussion drone hardcore metal clip fuzz solo Key feedback melody action
 Distorted bpm riff slash bass power drum hoover noise delay rhythmic lead-guitar string Metal effect
 looped loop rock 120bpm synth heavy resonant blues rhythm wild ambient zagi2 gabber Rock Electric-
 Guitar loud rhythm-guitar intro electronic chords dark Harmonic electric-guitar lick fx lead access-virus distorted-
 guitar amp indie Guitar experimental hard sound pareidolia echo

Most commons keywords tagcloud:

guitar chord distortion Effects Hardstyle Gabber Boss chord overdrive drums microphone reverb riff
 drum Guitar rock playing kicks Cubase loop tascam style distorted sound
 signal Amp This guitar amp share electric guitar bpm string Logic Pro acoustic guitar href
 recorded raw delay Edition unit An bit computer created My sample rel="nofollow" level
 pitch nice song keyboard simple hard dance processed Recorded Modelling Sound looped http
 Distorted Ibanez links Here Electro-Harmonix fret short access virus guitar high https
 plugins amp sounds dedicated The Enjoy 4- played July strings noise bass live wave remix
 Orange Made M-Audio de BPM lot amplifier Series EQ crunchy Check All Riff stuff FX

Electric Guitar

Example sounds:

</

Most commons tags tagcloud:

note effect instrument 115bpm loud A Electric pan power reverb fuzz stereo processed outer beat Drum
 loop solo blues chords ambient overdrive Electric-Guitar 4x4-Records a-string experimental bowed hendrix
 sample delay distortion dist string stretch palm-mute psychedelic chord Lead c time Clean EDM Loop
 simple electric-guitar bending drums distorted funk clean Power soundscape heavy lick riff e amplifier Bass
 echo fender spacey D Funk acoustic Snare 90Bpm wah distortion Drums rock
 cool dilation rhythmic Stab Guitar strum metal Music Kick power-chord environmental-sounds-research sci-fi
 Sample phase treble slow space amp Acoustic noise atmosphere bass bow Instrument sound bpm

guitar













electric

Most commons keywords tagcloud:

Electric guitar Two It muted amp disk Distorted sliding style overdrive Me High Red bit /archive
 power chord algorithm played audacity Fender reversed Clean music The sid delay Zoom simple These
 sound plugged samples pickups http lick pedal Recorded Tube distortion reverb Electric Guitar Guitar
 noise Blue Simple Boss chord Orange Ibanez key direct link projects good minor preamp electric forget
 loop short wah Pacifica processed riff plugging href Logic Pro clean la Hendrix heavy metal created
 computer tremolo Amp This looped acoustic playing guitar chord strummed single GT Modelling sample lace
 guitar Short BOSS amplifier strings electric guitar Funky sounds
 distorted bpm Les Paul rel="nofollow" recorded Electric

Acoustic Guitar

Example sounds:

-00:12		FenrirFangs	guitar pluck.wav			
			guitar	strings	pluck	
-00:20		Stan_Rech	Acoustic Guitar Open E and e Strings.wav			
			Acoustic	strings	pluck	
-00:08		NoiseCollector	yamaha_C9.wav			
			amaha	acoustic	9th	
-00:06		memz	guitar.mp3			
			guitar	chord	c	
-00:19		mchladil	guitar chords - ed.wav			
			chords	acoustic	guitar	
-01:10		TexasMusicForge	Dandelion.mp3			
			guitar	acoustic	instrumental	

Most commons tags tagcloud:

quantized film Drum a 6 reverb dry sample-pack ambient Faux pop delay roland-oetter nylon-guitar music piano Funk sound Loop acoustic-guitar notes Classical Music Drums Acoustic-Guitar clean Electronic instrumental sounds minor atmosphere summer tap flstudio Bass sample steel electric efx Acoustic reggae chords Nylon Finger-picking Lead banjo note short sustain noise folk-guitar musical-instruments loop strings strum e dance pluck folk Electric speech rock chord arpeggio classical picking tuning String twang string melody Scrubs Folk blues Kick unprocessed Live strummed rhythm strumming base lsd grunge original recording loops notification beat sad Guitar riff nylon major emotional synth Snare stereo slide

Most commons keywords tagcloud:

Me Sounds gt playing recording download Logic Pro chords classical guitar chord Synths /12 sounds body Acoustic guitar strings https Kontakt mics Lethbridge accompanied nylon Recorded tuning stereo bit noise licks cmd record This created Tascam D Major ST bit.ly Sound Tuning Some strummed Sony loop samples professional tascam base Melodic strong instrument riff Acoustic Guitar sound Zoom music strumming High microphone short Acoustic slide instrumental href Piece Guitar Try 2016 reverb The tuned projects Yamaha direct guitar MK If These project pop Sennheiser banjo rel="nofollow" sample kind http octave processed song electric noises Made string acoustic recorded microphones It Folk mic played Reaper