

Welcome to a GCDI Workshop!

Basic Audio Editing with Audacity

Di Yoong

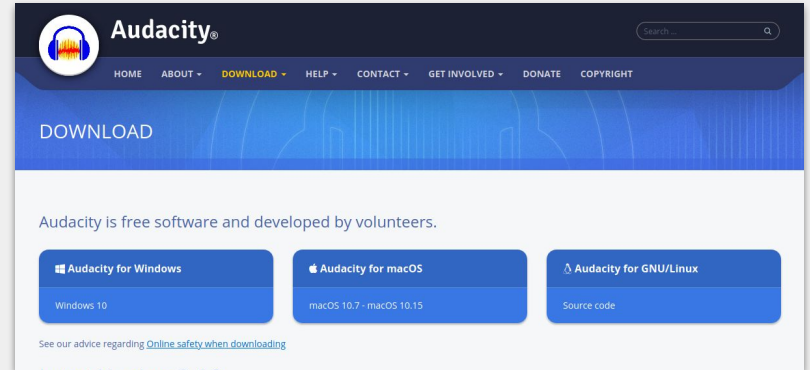


GC Digital Initiatives

THE
GRADUATE
CENTER
CITY UNIVERSITY
OF NEW YORK

Before we begin

- ❑ [Audacity](#) installed?
- ❑ [Short audio clip](#) downloaded?
 - ❑ TRIAL_sample16bit0331.wav
 - ❑ TheFreeharmonicOrchestra_NoRobots.mp3



What is GCDI?

Graduate Center Digital Initiatives brings together the work of scholars and technologists at the CUNY Graduate Center to pioneer new modes of inquiry that integrate digital tools and methods into the research, teaching, and service missions of the university. We do so by fostering communities of creative and critical practice among students, faculty, and staff through programs, events, workshops, grant-funded projects, consultations, and more.

What is GCDI?

Led by GC Digital Fellows, we offer support for **digital scholarship** through

- Workshops
- Consultations
- Working Groups
- Online Resources

Time for introductions~!

Briefly, please share your:

Name,

Gender pronouns,

What brought you here today? (1-2 sentences)

Orientation of workshop

- Overview of digital audio recording
- Application time!
 - Processing and editing your interviews
- Check-out

Digital Audio Recording

Check your levels!



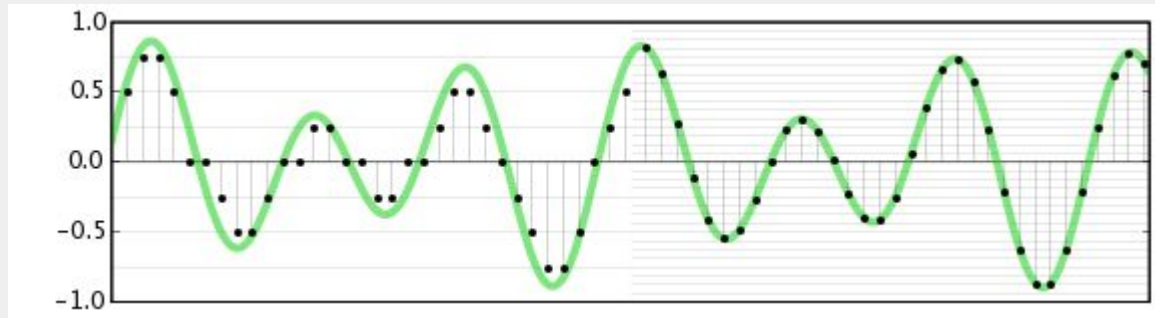
...but listen to your ears, not your eyes!

A note on file formats

- Uncompressed formats
 - WAV (loseless)
- Compressed formats
 - MP3 (lossy)
- Record and edit in an uncompressed format, (at least) 16-bit, & 44.1 kHz

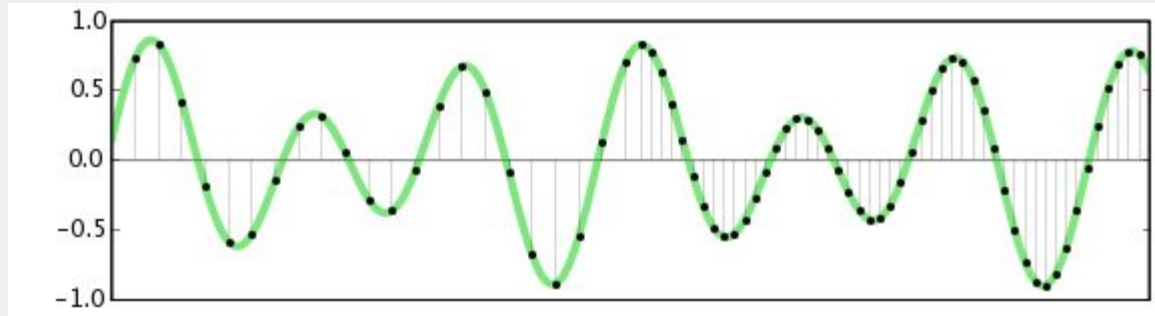
Digital audio quality

- Bits aka sample formats
 - The more bits used, the more precise the representation of each sample; increasing bits = increase max dynamic range
- Common sample formats and dynamic range:
 - 16-bit integer: 96 dB*
 - 24-bit integer: 145 dB
 - 32-bit floating point: near-infinite dB



Digital audio quality

- Hertz aka sample rates
 - Number of samples captured per second; Higher rates = higher audio frequencies represented
 - Human ear 20 Hz - 20,000 Hz; sample rate of 40,000 min if reproducing full range of audible sounds
- Common sample rates:
 - 44,100 Hz -- CD audio quality



Some data management considerations

- How are you planning to name your files? Anonymity concerns?
- What metadata is important to your audio file?
 - Archival vs. just for yourself
- What file format will you save your audio?
 - Will you be publishing your audio? How will it be distributed?
- Where will you be saving your audio?

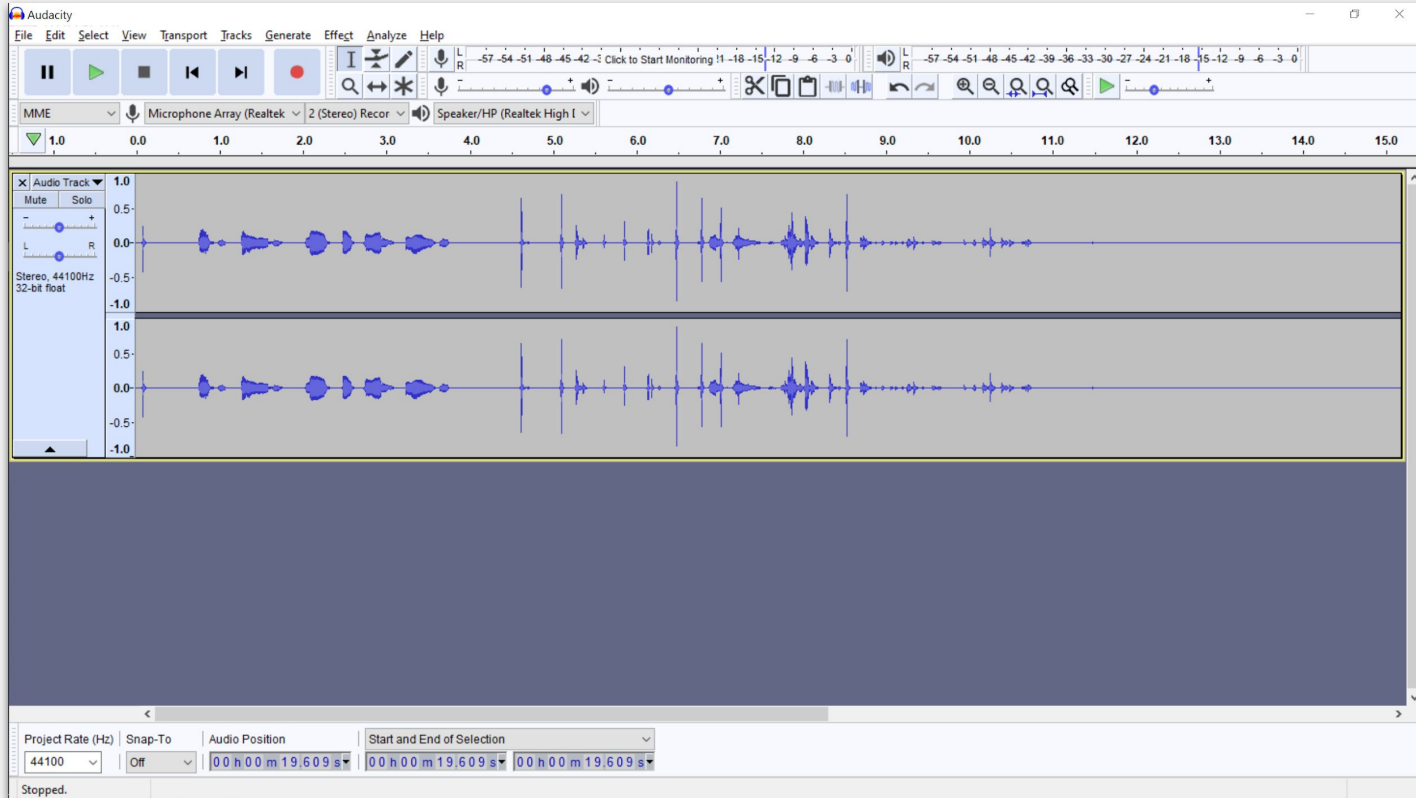
Using Audacity

Audacity

- Free and open-source audio editing and recording software
- Works across different operating systems (Windows, Mac OS X, GNU/Linux)
 - Great for sharing project files
- Allows for many different audio file formats (compressed and uncompressed) and input modes (mono, stereo, multitracks)



Navigating Audacity



Loading your files

- You can open up an audio file directly in Audacity
 - File > Import > Audio
- **Always save a copy before editing;** avoid directly editing an original file
 - In case of corruption or other accidental edits (e.g. deleting a chunk of your interview) you can always return to your original recording
 - .aup is the Audacity project file format

Cleaning your recording

- Noise reduction
 - Be careful you don't end up eliminating part of your interview!
- Amplifying and Normalization
 - Beware of distortion!

* Note that applying an effect on a long recording will take a while; Audacity has a preview function (default = 6 secs)

Splitting tracks and joining clips

- Fade-in & out

Mastering your recording

- Check your overall levels
 - When you have multiple tracks in your project, the combined levels of your tracks can bring up the loudness of your final recording
 - If there are moments in your recording that is too loud, you will have to adjust individual tracks to accommodate the overall volume

Saving your output

- Metadata
 - You can create your own tags for your interview tracks
 - *Edit > Metadata > Add*
- Streaming v. archival purpose
- Naming formats

Use arrow keys (or ENTER key after editing) to navigate fields.

Tag	Value
Artist Name	Patsy Cline
Track Title	Walkin' After Midnight
Album Title	1973 Country Music Hall Of Fame
Track Number	1
Year	1957
Genre	Country
Comments	

Add Remove Clear

Genres: Edit... Reset...

Template: Load... Save... Set Default

Don't show this when exporting audio

OK Cancel ?

Extra!

Recording (in Audacity)

- Create a new **stereo** track
 - Tracks > Add New > Stereo
- Pay attention to your **levels!**
 - Stay within -15 and -12dB
 - You can adjust your levels on Audacity via your track **Gain**
 - Remember to **playback** your recording
 - Check your recording before you begin in earnest!

Recording (in Audacity)

- Pause v. Stop
 - Pause: Pauses your recording on the current track
 - Stop: Ends the recording of the current track
- Record your room tone
 - Before you start recording proper, record 30 seconds of your room tone

Pay attention to...

- Where you are in relation to your microphone
 - 4-6 inches in front of your mic (off-axis) is ideal
- Plosives/P-pops
 - “Peter Piper picked a peck of pickled peppers”
- Sibilance
 - “And the silken sad uncertain rustling of each purple curtain”
- Mouth noises
 - Lip smacking, slurping
- Here’s [a checklist!](#)

Background music and ambient sounds

- Using background music/ambient sounds
 - Creative Commons [licensing](#)
 - [How to use your CC music](#)
 - [Free Music Archive](#)

Creative Commons Licenses

Everything you need to know about...

Creative Commons Licenses

What?

With a Creative Commons license, the author retains copyright and the public is allowed to reuse the content.


Why?


The use of Creative Commons licenses encourages universal access to research.


How?


There are 6 types of Creative Commons licenses, each with different specifications for attribution, reuse and modification.

The Icons



Attribution (BY)



Non-Commercial (NC)



No Derivative Works (ND)



Share Alike (SA)

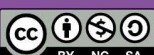
The Licenses

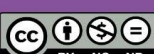
 **BY**
Allows others to copy, distribute, transmit and adapt the article as long as the author is attributed. The CC BY license permits commercial and non-commercial use.

 **BY SA**
Allows others to copy, distribute, transmit and adapt the article as long as the author is attributed and new creations are under the same license as the original. The CC BY-SA license permits commercial and non-commercial use.

 **BY ND**
Allows others to copy, distribute, transmit the article as long as the author is attributed and the article is not modified or adapted in any way. The CC BY-ND license permits commercial and non-commercial use.

 **BY NC**
Allows others to copy, distribute, transmit and adapt the article as long as the author is attributed. The CC BY-NC license only permits non-commercial use.


 **BY NC SA**
Allows others to copy, distribute, transmit and adapt the article as long as the author is attributed and new creations are under the same license as the original. The CC BY-NC-SA license only permits non-commercial use.

 **BY NC ND**
Allows others to copy, distribute and transmit the article as long as the author is attributed and the article is not modified or adapted in any way. The CC BY-NC-ND license only permits non-commercial use.

Do's and Don'ts

	Copy	Attribution Required	Commercial Use	Modify or Adapt	Change License
CC BY	✓	✓	✓	✓	✓
CC BY-SA	✓	✓	✓	✓	✓
CC BY-ND	✓	✓	✓	✗	✓
CC BY-NC	✓	✓	✗	✓	✓
CC BY-NC-SA	✓	✓	✗	✗	✗
CC BY-NC-ND	✓	✓	✗	✗	✓

Source: <https://creativecommons.org/licenses/>



From Neubeiser, K. (2016), [Infographic: Everything you need to know about creative commons licenses](https://creativecommons.org/licenses/), Wiley.

More resources

- [Getting Good \(Enough\) Audio Recording](#)
- NPR
 - [NPR: The ear training guide for audio producers](#)
 - [NPR: The producer's handbook to mixing audio stories](#)
- Audacity
 - [Radio.co: Audacity radio editing guide](#)
 - [Audacity tutorial](#)
 - [Audacity: Mixing a narration with background music](#)

Check-out

Sound Studies Working Group

Next meeting:


- April 19th (Mon)
 - Vote for a [time!](#)

Join us on [our commons group page](#) to receive latest notifications on future events!

Evaluations

<http://cuny.is/GCDI-webevals>

How can I get involved with GCDI?



The screenshot shows the homepage of the Graduate Center Digital Initiatives (GCDI) website. At the top, there is a navigation bar with the logo and name 'GC Digital Initiatives' on the left, and a menu of links: 'About', 'People', 'Calendar', 'Participate', 'Resources', 'News', and a search icon. Below the navigation bar is a large hero image showing a person's hands typing on a laptop keyboard in a workspace with a water bottle and papers. Overlaid on this image is the text 'Interdisciplinary Events, Workshops, & Speaker Series' in white. Below the hero image is a row of five small grey dots, with the first one being slightly larger and darker, indicating the current slide in a carousel. Underneath the dots is a paragraph of text: 'Graduate Center Digital Initiatives (GCDI) brings together the work of leading scholars and technologists at the CUNY Graduate Center to pioneer new modes of inquiry that integrate digital tools and methods into the research, teaching, and service missions of the university.' At the bottom of the page, there are five grey rectangular buttons, each with an icon and text: 'Projects' (lightbulb icon), 'Degrees & Certificates' (graduation cap icon), 'Workshops' (group of people icon), 'Guides & Tutorials' (book icon), and 'Join us for an event' (calendar icon).

GC Digital Initiatives

About People Calendar Participate Resources News

Interdisciplinary Events, Workshops, & Speaker Series

Graduate Center Digital Initiatives (GCDI) brings together the work of leading scholars and technologists at the CUNY Graduate Center to pioneer new modes of inquiry that integrate digital tools and methods into the research, teaching, and service missions of the university.

Projects Degrees & Certificates Workshops Guides & Tutorials Join us for an event

How can I get involved with GCDI?

The screenshot displays the CUNY Academic Commons interface. At the top, the logo 'CUNY ACADEMIC COMMONS' is visible in orange, blue, and green. A search bar with 'Google Custom Search' and a search button is located in the top right. Below the logo is a navigation menu with tabs for 'People', 'Groups', 'Sites', 'Papers', 'Courses', 'Events', 'News', and 'About'. Social media icons for Twitter and RSS are also present.

The main content area features a sidebar on the left for 'GC Digital Initiatives at the CUNY Graduate Center'. The sidebar includes a home button, icons for Forum, Events, Papers, Files, and Docs, and a 'Members 190' indicator. The main content area displays the group's title, a colorful logo, and a description: 'This group accompanies the the GCDI website (<http://gcdi.commons.gc.cuny.edu/>). Here, members of the GC community can share news of recent events and new projects and can begin to build connections between projects.' A 'Quick Link' is provided: <http://cuny.is/group-gcdi>.

Below the description is a 'Recent group activity' section with an RSS icon and a 'No Filter' dropdown. The activity list shows a post by 'Inés Vañó García' titled 'CFP – Special Issue – Journal of Interactive Technology and Pedagogy (11/30/19) in the forum' and another post titled 'Digital Initiatives at the CUNY Graduate Center 3 days ago'. A snippet of the journal article is visible at the bottom: 'The Journal of Interactive Technology and Pedagogy Special Issue:'.