

# AI: How to deep fake audio and video locally

magnusviri (James Reynolds), October 23, 2025

# About James Reynolds

- Bachelor of Music, 1999, University of Utah
- Marriott Library, 14 years (Mac admin)
- School of Biological Sciences, 11 years (Mac, Linux, network admin)
- College of Science (SBS), 3 months
- Security and AI are “hobbies” of mine



**Slides: <https://magnusviri.com/saintcon2025>**

# Is This Presentation Legal?

- Four categories of laws
  - Non-consensual intimate image (NCII) aka “revenge porn”
  - Political
  - Fraud, extortion & child-protection expansions
  - Personality (basically this presentation)
    - The person must be identifiable— Let’s test this out?





# In The News

- Non-consensual intimate image (NCII) aka “revenge porn”
  - 45-year-old Kevin Scholz digitally undressed an ex-girlfriend and sent her the image
    - <https://www.yahoo.com/news/articles/ai-deepfake-nudes-wisconsin-case-224142368.html>
  - <https://www.news-herald.com/2025/09/21/kids-are-making-deepfakes-of-each-other-and-laws-arent-keeping-up/> (with links to many other news articles)
- Political
  - South Park, season 27, episode 1
  - <https://californiaglobe.com/articles/babylon-bee-gets-last-laugh-federal-judge-finds-ca-deepfake-law-unconstitutional/>
  - <https://www.express.co.uk/news/politics/2123159/tory-mp-deep-fake-video-defect-reform-George-Freeman>

# Federal Laws

- Federal laws are lagging behind states
- TAKE IT DOWN Act (Public Law 119-12)  
<https://www.congress.gov/119/plaws/publ12/PLAW-119publ12.pdf>
  - Criminalizes the non-consensual *sharing* (or threatening to share) intimate deepfake content
  - 2 years in prison penalty, 3 years if the image is of a minor
- NO FAKES Act (not passed)
  - Would criminalize personality deepfakes (this presentation)

# State Laws

"AI STOLE  
MY VOICE"



- 48 states have laws and it's absolute chaos
- Utah
  - <https://www.alstonprivacy.com/new-artificial-intelligence-laws-in-effect-in-utah/>
  - Adds AI to an old law that criminalizes stealing a person's identity **for commercial or endorsement purposes** without consent
    - <https://le.utah.gov/~2025/bills/static/SB0271.html>
    - <https://youtu.be/vHuPWQz9All> (Jeff Geerling, tech blogger)
    - [https://youtu.be/euU8e7\\_wZfg](https://youtu.be/euU8e7_wZfg) (Remie Michelle Clarke, voice actress)
  - Criminalizes tools dedicated to stealing personalities **for commerce**

**Ok, This Presentation is Legal in Utah! Yay!**

# Deepfake How To

- Unfortunately, there ~~is no easy~~ is only one easy to use tool ***that runs locally***
  - Experience with installing python is required
  - brew, git, pip, uv, conda
  - I do not recommend using Pinokio, the one easy to use tool
    - There's no security and I think it is too easy to hide malware in it
- Deepfaking can be done on slow, underpowered computers
- *Realtime* deepfaking requires way more power than I have:  
MacBook Pro M4, 2024, 48 GB RAM

# Gradio

- “Gradio is the fastest way to demo your machine learning model with a friendly web interface so that anyone can use it, anywhere!”
- <https://www.gradio.app/>


```
import gradio as gr

def greet(name):
    return "Hello " + name + "!"

demo = gr.Interface(fn=greet, inputs="text", outputs="text")
demo.launch()
```

name

output

gradio/hello\_world built with Gradio. Hosted on  Spaces

# Windows Support?

- Windows isn't always supported for some reason
- Linux is the primary platform of the ML developers
- macOS gets support because it's so similar to Linux
  - Projects that only use CUDA do not support macOS
    - The macOS version of CUDA is called MPS (Metal Performance Shader) aka Apple Silicon

# Notable Open Source Audio Gen Tools

- Asians are really big into this
- These repos haven't been updated in a long time but they work
- Coqui-AI XTTS-v2 <https://github.com/coqui-ai/TTS>
- MeloTTS <https://github.com/myshell-ai/MeloTTS>
- ChatTTS <https://github.com/2noise/ChatTTS>
- Zonos <https://github.com/Zyphra/Zonos>

# Zonos macOS Install & Run

```
# Install Brew (https://brew.sh/) (brew installs git)
brew install uv python@3.12 espeak-ng
git clone https://github.com/Zyphra/Zonos.git
cd Zonos
git checkout bc40d98e1e1ab54fc65c483be127a90e3c7c0645
uv run radio_interface.py
```

# Zonos Demo

# Notable Video Deepfake Tools

- FaceFusion <https://github.com/facefusion/facefusion> (requires Conda)
- Deep-Live-Cam <https://github.com/hacksider/Deep-Live-Cam>
- deepface <https://github.com/serengil/deepface>
  - This doesn't make deepfakes but has a deepfake detector and other tools
- Automatic1111 face swapping
  - Insightface <https://github.com/deepinsight/insightface>
  - Roop <https://github.com/s0md3v/roop>

# Did I Mention Deepfake Porn is Now Illegal?

- My search for tools found articles with blurred pictures of deepfake porn...
- 2 years of prison folks...



# FaceFusion macOS Install & Run

```
# Install Brew (https://brew.sh/) (brew installs git)
brew install ffmpeg@7.0.2 miniconda
conda init zsh
mkdir facefusion
cd facefusion
conda create --name facefusion python=3.12 pip=25.0
conda activate facefusion
git clone https://github.com/facefusion/facefusion.git
cd facefusion
python install.py --onnxruntime default
python facefusion.py run --open-browser
```

# FaceFusion Demo

# Questions