# Hugo Flores García

**email:** hugofloresgarcia@u.northwestern.edu
Website // Google Scholar // GitHub

## BIO

I'm a researcher working at the intersection of machine learning, music, and human computer interaction. I'm interested in sound event detection, audio source separation, and interfaces for inclusive music creation.

## EDUCATION

**Northwestern University** — Evanston, IL
*Ph.D. in Computer Science* — *2020 - Present (expected 2025)*

**Georgia Southern University** — Statesboro, GA
*B.S. in Electrical Engineering* — *2016 - 2020*

## EXPERIENCE

**Spotify** — New York, NY
*Research Intern, Audio Intelligence* — *2022.06 - present*

**Northwestern University** — Evanston, IL
*Research Assistant, Interactive Audio Lab* — *2020.08 - present*
- Advisor: Bryan Pardo

**Audacity (Google Summer of Code)** — Remote
*Developer* — *2021.05-2021.09*
- Source Separation and Extensible Deep Learning Tools

**Georgia Southern University** — Statesboro, GA
*Research Assistant* — *2018.08 - 2020.05*
- Advisor: Fernando Ríos

## PUBLICATIONS

1. H. Flores Garcia, A. Aguilar, E. Manilow, D. Vedenko, and B. Pardo. Deep learning tools for audacity: Helping researchers expand the artist's toolkit. In *5th Workshop on Machine Learning for Creativity and Design at NeurIPS 2021*, 2021
2. H. Flores Garcia, A. Aguilar, E. Manilow, and B. Pardo. Leveraging hierarchical structures for few-shot musical instrument recognition. In *Proceedings of the 22nd International Society of Music Information Retrieval Conference (Best Paper Award)*

## OPEN SOURCE SOFTWARE

**Audacity (Audio Editor)**
*Developer* — *2021 - Present*
Contributed a software framework that lets deep learning practitioners easily integrate their own PyTorch models into the open-source Audacity DAW. This lets ML audio researchers put tools in the hands of sound artists without doing DAW-specific development work.
See https://interactiveaudiolab.github.io/project/audacity.html.

**torchopenl3**
*Lead Developer* — *2020 - Present*
A PyTorch port of the OpenL3 audio embedding model.
Used as class materials for CS 352 - Machine Perception of Music and Audio
See https://github.com/hugofloresgarcia/torchopenl3.

**Philharmonia Dataset**
*Lead Developer* *2020 - Present*
PyTorch dataset bindings for the Philharmonia Orchestra sound samples.
Used as class materials for CS 352 - Machine Perception of Music and Audio
See https://github.com/hugofloresgarcia/philharmonia-dataset.

## TALKS

**Deep Learning for Music Interfaces**
*Universidad Nacional Autónoma de México (UNAM)* *April 6 2022*

**Leveraging Hierarchical Structures for Few-Shot Musical Instrument Recognition**
*ISMIR 2021* *November 9 2021*

**Deep Learning Tools For Audacity: Helping Researchers Expand the Artist's Toolkit**
*Bay Innovative Signal Hackers (BISH) Bash* *October 27 2021*

**Deep Learning Tools For Audacity: Helping Researchers Expand the Artist's Toolkit**
*Neural Audio Synthesis Hackathon (NASH) Workshop* *December 12 2021*

## HONORS AND AWARDS

**Best Paper Award - Leveraging Hierarchical Structures for Few Shot Musical Instrument Recognition**
*ISMIR 2021* *2021*

**Cognitive Science Fellowship**
*Northwestern University* *2020 - 2021*

**Lewis and Charlene Stewart Jazz Scholarship**
*Georgia Southern University* *2016 - 2020*

**Coastal Jazz Scholarship**
*Coastal Jazz Association* *2019*

**Undergraduate Research Grant**
*Georgia Southern University* *2018*

**Honors Program 1906 Scholarship**
*Georgia Southern University* *2016-2020*

## SKILLS

- **Programming Languages** - *Expert:* Python, C++ , *Intermediate*: Javascript
- **Machine Learning** - *Expert:* PyTorch, Scipy, Numpy, Scikit-learn, *Intermediate:* TensorFlow
- **Creative Coding** - *Expert:* SuperCollider, Max/MSP/Jitter, PureData, *Intermediate:* OpenFrameworks, P5js
- **Music Production** - Logic Pro, Avid ProTools
- **Languages** - I can read/write/speak English and Spanish proficiently.

## TEACHING

**Teaching Assistant**
*Northwestern University* *Spring 2022*
COMP_SCI 497 – Digital Musical Instrument Design

**Teaching Assistant**
*Northwestern University* *Fall 2021*
EECS 349 – Intro to Machine Learning

**Teaching Assistant**
*Georgia Southern University* *2018 - 2019*
Electric Circuit Analysis

## SERVICE

**Board Member**
*Latin@CS - Northwestern University* *Fall 2021*