

# Hugo Flores García

**email:** hugofloresgarcia@u.northwestern.edu

[Website](#) // [Google Scholar](#) // [GitHub](#)

## BIO

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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

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<b>Northwestern University</b> <i>Ph.D. in Computer Science</i>	Evanston, IL 2020 - Present (expected 2025)
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<b>Georgia Southern University</b> <i>B.S. in Electrical Engineering</i>	Statesboro, GA 2016 - 2020
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## EXPERIENCE

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<b>Descript</b> <i>Research Intern</i>	Remote 2022.09 - present
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<b>Spotify</b> <i>Research Intern, Audio Intelligence</i>	New York, NY 2022.06 - 2022.09
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<b>Northwestern University</b> <i>Research Assistant, Interactive Audio Lab</i> <ul style="list-style-type: none"><li>• Advisor: Bryan Pardo</li></ul>	Evanston, IL 2020.08 - present
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<b>Audacity (Google Summer of Code)</b> <i>Developer</i> <ul style="list-style-type: none"><li>• Source Separation and Extensible Deep Learning Tools</li></ul>	Remote 2021.05-2021.09
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<b>Georgia Southern University</b> <i>Research Assistant</i> <ul style="list-style-type: none"><li>• Advisor: Fernando Ríos</li></ul>	Statesboro, GA 2018.08 - 2020.05
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## PUBLICATIONS

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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)*, 2021

## OPEN SOURCE SOFTWARE

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<b>Audacity (Audio Editor)</b> <i>Developer</i>	2021 - Present
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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

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### 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

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### 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

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- **Programming Languages** - *Expert*: Python, C++, *Intermediate*: Javascript, C
- **Machine Learning** - *Expert*: PyTorch, Scipy, Numpy, Scikit-learn, 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

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### 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

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### Board Member

*Latin@CS - Northwestern University*

*Fall 2021*