

Hugo Flores García

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

Descript <i>Research Intern</i>	Remote 2022.09 - present
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Spotify <i>Research Intern, Audio Intelligence</i>	New York, NY 2022.06 - 2022.09
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Northwestern University <i>Research Assistant, Interactive Audio Lab</i> <ul style="list-style-type: none">• Advisor: Bryan Pardo	Evanston, IL 2020.08 - present
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Audacity (Google Summer of Code) <i>Developer</i> <ul style="list-style-type: none">• Source Separation and Extensible Deep Learning Tools	Remote 2021.05-2021.09
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Georgia Southern University <i>Research Assistant</i> <ul style="list-style-type: none">• Advisor: Fernando Ríos	Statesboro, GA 2018.08 - 2020.05
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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)*, 2021
3. Y. Wang, H. F. García, and J. Choi. *Few-Shot and Zero-Shot Learning for Music Information Retrieval*. In 23rd International Society of Music Information Retrieval Conference, 2022

OPEN SOURCE SOFTWARE

Audacity (Audio Editor) <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

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, C
- **Machine Learning** - *Expert:* PyTorch, Scipy, Numpy, Scikit-learn, TensorFlow
- **Creative Coding** - *Expert:* SuperCollider, Max/MSP/Jitter, *Intermediate:* OpenFrameworks, P5js, Pure-Data, JUCE
- **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