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

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

EXPERIENCE

Descript — Remote
Research Intern — *2022.09 - present*

Spotify — New York, NY
Research Intern, Audio Intelligence — *2022.06 - 2022.09*

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)*, 2021

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, 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

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*