

Machine Learning and Music Classification

Activity Plan

Overview

In this activity, students build, train, and test a machine learning model to classify music into genres using Teachable Machine. They explore how the amount and variety of training data impact the model's accuracy, then reflect on the strengths and limitations of AI in music classification.

Recommended Grade Level(s): 9-12

Recommend Age Range: 13-18

Activity Length: 1 hour

Experience Level: Beginner

Technical Requirements

- Device Requirements
 - 1 computer per student during class (Mac, PC, Chromebook all work great!)
 - Online connectivity at a minimum of 10Mb/sec
 - Modern browsers on computers
 - Chrome
 - Firefox
 - or Safari Version 15.1 or higher
- Tool Access
 - [Teachable Machine](#)
 - Music samples from streaming platforms (YouTube, Spotify, etc.) or copyright-free sources (Freesound, Pixabay)
- Note on Student Accounts:
 - Students will complete the activity on the CodeHS platform. Students do not need to create an account or log in to access this activity, however they will not be able to save or return to their work later unless they are logged in to CodeHS. See optional instructions on how to set students up here: codehs.com/hoai_account_setup

Activity Materials

Teacher Resources:

- [Lesson Plan](#)

Student Activity:

- codehs.com/hourofai/music

Content Standards

- **CSTA 1B-DA-06:** Organize and present collected data visually to highlight relationships and support a claim.
- **CSTA 2-DA-08:** Collect data using computational tools and transform the data to make it more useful and reliable.
- **CSTA 3A-DA-11:** Create interactive data visualizations using software tools to help others better understand real-world phenomena.
- **CSTA 3B-DA-12:** Create computational models that represent the relationships among different elements of data collected from a phenomenon or process.

Teacher Instructions

- Before the Hour of AI:
 - Review the technical requirements for this activity and teacher lesson plan
 - (Optional) Set up your free teacher account if you plan to have students create accounts
- During the Hour of AI:
 - Direct students to codehs.com/hourofai/music
 - Allow students to work through Hour of AI at their own pace, providing encouragement and support when needed.
- After the Hour of AI:
 - Did you know that CodeHS offers K-12 AI curriculum, PD for teachers, and classroom tools? Go to codehs.com/ai to learn how you and your students can continue learning about AI.

Need Help?

Email support@codehs.com to get in touch with our support team!