

Understanding Intelligent Machines (8-9)

Hello! This document includes a brief outline of our Understanding Intelligent Machines workshop, as well as relevant BC ADST curriculum connections. In this workshop, students will be introduced to the world of machine learning and artificial intelligence! Students will be exposed to multiple different AI software, culminating in students creating their filters/emojis using various poses.

If you'd like to register for our workshops, please fill out our registration survey linked here: https://ubc.ca1.qualtrics.com/jfe/form/SV_e2HKJZQ9L1DwY2W

<p>BC Curriculum Ties (In addition to satisfying multiple core competencies)</p>	<p><u>BC Applied Design, Skills, and Technologies Curriculum Links 10-12:</u></p> <p>Computer Programming 10-12:</p> <ul style="list-style-type: none"> • <i>Content:</i> <ul style="list-style-type: none"> ○ <i>Development and collaboration in a cloud-based environment</i> ○ <i>Current and future impacts of evolving web standards and cloud-based technologies</i> ○ <i>Relationships between technology and social change</i> • <i>Applied Design</i> <ul style="list-style-type: none"> ○ <i>Defining- Identify criteria for success, intended impact, and any constraints</i> ○ <i>Ideating- Critically analyze and prioritize competing factors, including social, ethical, and sustainability considerations, to meet community needs for preferred futures, Choose an idea to pursue, keeping other potentially viable ideas open</i> ○ <i>Testing- Develop an appropriate test of the prototype</i> ○ <i>Making- Identify appropriate tools, technologies, materials, processes, and time needed for production</i>
<p>Grade Levels</p>	<p>8-9</p>
<p>Time</p>	<p>1~1.5 Hours</p>

Goals of the Workshop	<ol style="list-style-type: none">1. Understanding machine learning processes2. Using machine learning to make predictions and decisions3. Application of machine learning to solve engineering problems
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Activity Descriptions

Google Drawing Guesser

Objective: To learn about how machine learning algorithms recognize and categorize information as well as the limitations of machine learning

Participants will:

- Learn how machine learning differs from traditional computer programs
- Understand how humans learn using classical and operant conditioning
- Use Google Quickdraw to see a computer program guess drawings
- Learn about the applications and limitations of machine learning including biases and its impact on social media

Pose Emojis

Objective: To train a machine learning program with photos and to use the algorithm to code emojis

Participants will:

- Learn more details about machine learning such as training vs testing sets, the importance of quality data, false positives, and confidence intervals
- Train a machine learning algorithm to recognize certain poses
- Learn basic JavaScript coding
- Code emojis/filters to only appear when certain poses are performed

We can't wait to connect with your school & expose your students to the STEM field with our exciting, hands-on STEM activities!

