



AI4ALL

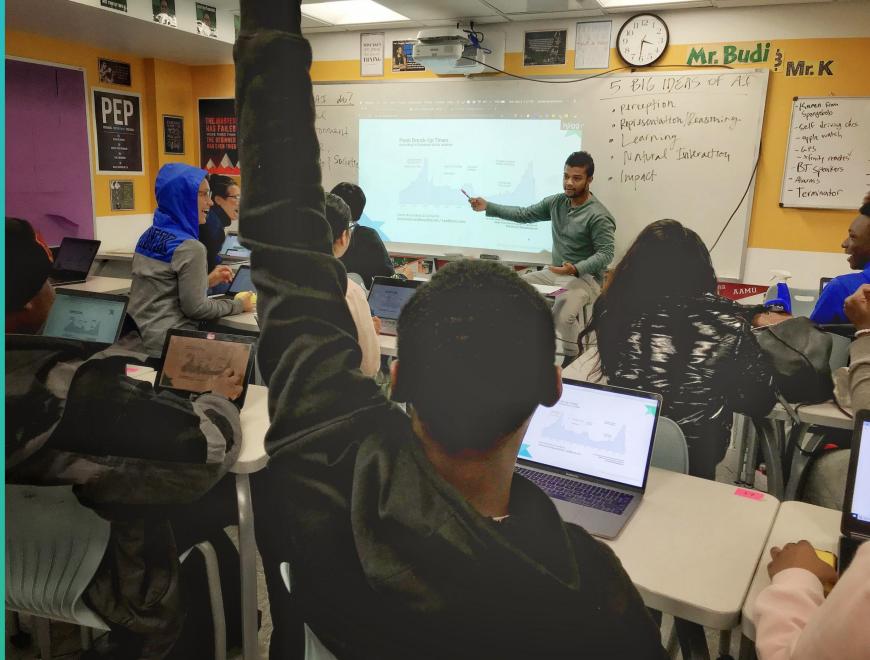
All Means All:

Bringing project-based, approachable
AI curriculum to more high school students through AI4ALL
Open Learning

Link to slides: bit.ly/AAAI2019

Sarah Judd / November 8, 2019
@SarahEJudd

Outline



AI4ALL Open Learning in action at Washington Leadership Academy in Washington, D.C.

- Who am I?
- What is AI4ALL?
- What is AI4ALL Open Learning?
- Outline of ExploreAI
- Hopes for the future



About me

About me



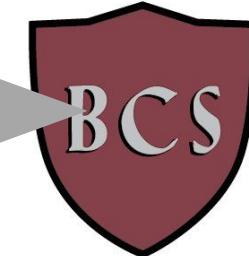
- Sarah Judd
- Curriculum Manager
AI4ALL Open Learning
- @SarahEJudd
- They/them or she/her



About me



girls who
CODE



About AI4ALL



OUR MISSION:

Increase Diversity & Inclusion in
AI Development, Education,
Policy, & Research.



The AI4ALL Solution: 3 Core Initiatives



AI4ALL Open Learning



Enabling AI projects for good



Summer Programs



Hosted at AI-focused Universities



Changemakers in AI

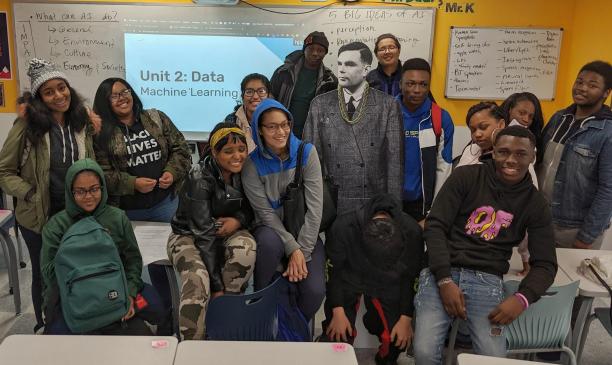


Supporting careers for AI4ALL alumni



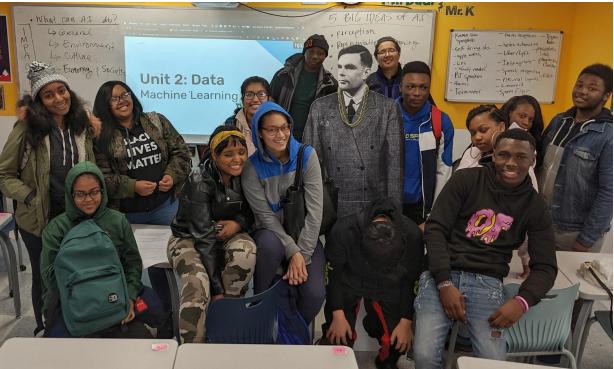
About AI4ALL Open Learning

Open Learning Audience



- High School students
- Not a MOOC - meant to be run in classroom settings
- Pacing exists for workshops, after-school, and in-school programs
- Diverse backgrounds and interests
 - Diverse role models
 - Diverse applications
 - Explicitly calls out diverse paths

ExploreAI Audience



- Can be used in ANY class, not just CS
- Offers 10, 20, and 30 hour models
- NO background necessary--focus on AI literacy
 - NO computer programs
 - NO math
 - NO programming needed for this course
 - Still rigorous - gives a technical understanding of how machine learning works, how computers use data, algorithmic bias.

Explore AI Goal

Be an informed citizen in a world increasingly covered in AI.

- What is AI? How do I recognize its use when I see it?
- What is the impact of AI? What are some of its benefits and pitfalls?
- How does data affect the way machines learn?
- How can high schoolers get on a pathway towards working in AI?
- How is the world around us informed or uninformed about AI, and how can we increase everyone's knowledge?



The Curriculum

VOCABULARY

- **Bias:** (Oxford) prejudice in favor of or against one thing, person, or group compared with another, usually in a way considered to be unfair.
- **Algorithmic bias:** Automated decision-making that reflects existing societal biases, often because the data that the decision was based on reflected those biases.

DISCUSSION

- Check out other classes' definitions in the forum.
- How are they like your definition? How are they different? Why do you think that is?
- A few of you will be called on to answer that question

ACTIVITY: Spectrum

- For each example the teacher calls out:
 - If it is AI - GO LEFT
 - If it is NOT AI - GO RIGHT
 - If you're unsure or think it's a little of both - GO TO THE MIDDLE
- Make sure you have a reason for your choice!
- Feel free to change your position.

Curriculum Overview: What is AI

- What is AI and what is its impact?
 - Definition
 - A branch of computer science that allows computers to make predictions and decisions.
 - AI4K12's 5 Big Ideas
 - Predictions of where AI would go and how they went wrong
 - Strong vs weak AI
 - Impact of AI
 - Examples and non-examples
 - Unit project: Research an AI example in your world

A branch of computer science that allows computers to make ***predictions*** and ***decisions***.

Unit 1: What is AI?

11 / 12 lessons completed

PREVIOUS NEXT

Thanks for rating! ★★★★☆

1.2 What is AI? - AI4ALL's Definition
Google Drive

1.3 What is AI? - Strong Vs Weak AI
Google Drive

1.4 What is AI? - AI Predictions
Google Drive

1.5 What is AI? - 5 Big Ideas in AI
Google Drive



Curriculum Overview: Data

- How humans and machines learn from data
- Where the data comes from & data privacy
- Algorithmic bias
- Unit project: research project on algorithmic bias

The screenshot shows a Google Slides presentation. The slide title is "ACTIVITY: Fool the machine". The content of the slide includes a bulleted list:

- (If you are not in a place where there is another person to be your partner, you can try to fool your machine for yourself.)
- Explain to your partner what causes your green/purple/orange output.
- Have a partner try your machine. Try to fool your partner's machine.
 - Consider: using a different hand than it was trained on

At the bottom of the slide, there is a small note: "© Ai4ALL, 2019. May be reproduced with permission." The slide footer indicates it is "Slide 5".

To the right of the slide, the Google Slides interface shows the course navigation and file list. The course title is "Unit 2: What is Data?", showing 7 / 20 lessons completed. The navigation buttons are "PREVIOUS" and "NEXT". Below this, the rating is 4 stars. The file list includes:

- Human / Machine Learning Discussions (Lessons 2.01 - 2.04) (4 / 5)
- 2.01 Data - Human Learning Google Drive
- 2.02 Data - Machine Learning Google Drive** (highlighted in orange)
- 2.02: Worksheet Google Drive
- 2.03 Data - Vocabulary Google Drive

The bottom of the screen shows the "Learning Plan" for "ExploreAI (30 hours)" with 14% progress, a total duration of 9h 13m / 0h 0m, and a progress bar.



Curriculum Overview: Career paths in AI

- ALL careers use AI
- Careers where you're making and affecting AI
 - Engineers, Researchers, CEOs, Data Science, Ethics, Policy, Artists, the people who write Cortana's dialogue
 - What sorts of education people who have those jobs have
 - What other kinds of jobs they've had
- Research project: Learn about a role model in AI
- Unit project: Design a dream job in AI and a path to get there

The screenshot shows a learning platform interface for 'ExploreAI (30 hours)'. On the left, a profile card for Ayanna Howard is displayed, featuring her photo and a brief bio: 'Former Senior Robotics Researcher and Deputy Manager at NASA' and 'First became interested in robots as a kid watching "The Bionic Woman"'. Below this, a list of her educational background is shown: 'Education' with items like 'PhD Electrical Engineering / Robotics / Computer Science - University of Southern California', 'MBA - Claremont Graduate University', 'Master of Science Electrical Engineering - University of Southern California', and 'B.S. Engineering - Brown University'. To the right of the profile card, the main content area shows 'Unit 3: Career Paths in AI' with a progress bar indicating '8 / 12 lessons completed'. Below the progress bar are 'PREVIOUS' and 'NEXT' buttons. Further down, there is a rating section asking 'How would you rate this course?' with a 5-star rating, followed by links for '3.2 Worksheet [Printable]' and 'File download'. At the bottom of the main content area, three additional sections are listed: '3.3 - Career Paths in AI - Jobs in AI' (with a Google Drive link), '3.4 Career Paths in AI - Research Project: AI' (with a Google Drive link), and '3.4 Worksheet [Printable]' (with a File download link). The bottom navigation bar includes icons for back, forward, search, and settings, along with the text 'Learning Plan ExploreAI (30 hours)', '14% progress', '9h 10m / 0h 0m', and '9h 10m / 0h 0m'.



Curriculum Overview: Community Vision Project

- Learning about how to run a vox pop interview
- Planning, executing, finding trends in what people know about AI
- Unit Project: How can you help your community understand what you know now?

The screenshot shows a web-based learning platform. At the top, there's a navigation bar with a back button, the text "Back to ExploreAI (30 hours)", and other user icons. Below the bar, the title "AI4ALL Open Learning Program" is displayed. The main content area features a large image titled "How to do a Vox Pop" with a subtitle "Radio Rookies DIY Toolkit: How To Do Vo...". The image shows a cartoon character holding a video camera in front of a city skyline. To the right of the image, there's a sidebar for "Unit 4: Community Vision" which shows "7 / 14 lessons completed" and includes "PREVIOUS" and "NEXT" buttons. Below the sidebar, there's a rating section asking "How would you rate this course?" with a 5-star icon. The main content area lists four lessons:

- 4.1 - Community Vision - Community Perceptions of AI (Google Drive)
- 4.2 - Community Vision - Introduction to Interviewing (Google Drive)
- 4.3 - Community Vision - Effective Vox Pop Interviews (Google Drive) [highlighted in orange]
- 4.4a - Community Vision - Planning a Vox Pop Interview (Classroom) (Google Drive)



Curriculum Overview: Final project

- Final Project: OurAI
 - Learn a design thinking process
 - Use that process to imagine what AI might do in a field you care about
 - Consider impact
 - Consider possible places bias might happen

The screenshot shows a user interface for an open learning program. At the top, there's a navigation bar with a back arrow, 'My Dashboard' text, and two teal circular icons (one with a house, one with a graduation cap). Below the bar, the title 'AI4ALL Open Learning Program' is displayed. On the left, a user profile icon for 'Partner_TEST' is shown. The main area displays a grid of four items:

- AI in Art** (VIDEO, 00:49) by Sarah Judd (10/11/2019 - 3 view(s))
- AI and Art** (GOOGLE SLIDE) by Sarah Judd (10/11/2019 - 3 view(s))
- How AI will affect trains** (VIDEO, 01:08) by Sarah Judd (10/11/2019 - 3 view(s))
- Test** (IMAGE) by Eric Gunther (10/8/2019 - 3 view(s))

Below the items, there are filters ('FILTERS'), a count of '4 items', and a sorting option 'SORT BY: NEWEST TO OLDEST ▾'. The bottom right corner features a large orange 'AI' logo.

Curriculum Overview: Teacher Resources

- As a whole:
 - Module Guide
 - Discussion Guide

The screenshot shows a web-based learning platform for the AI4ALL Open Learning Program. At the top, there's a navigation bar with a back button, the program name, and three icons: a blue square, a white circle with a plus sign, and a grey ellipsis.

The main content area displays "Unit 1: What is AI? Facilitation Overview (Quick)". It includes a brief description of the unit, a section titled "Unit 1 Facilitator Resources" with a bulleted list, and a "Unit 1 Overview" section with a link to detailed walk-throughs.

To the right, a sidebar titled "Unit Plans and Facilitation Guides (30 Hours)" lists five items:

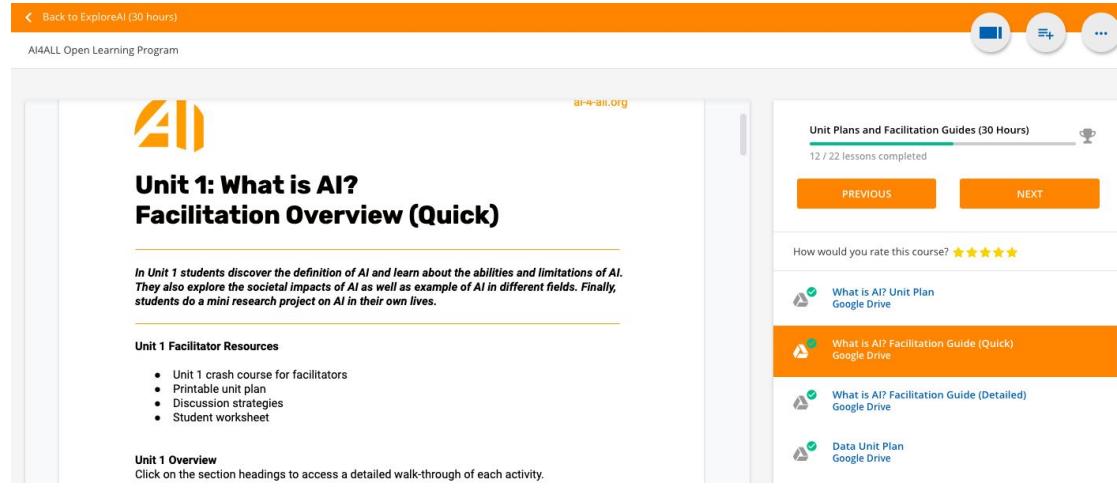
- What is AI? Unit Plan (Google Drive)
- What is AI? Facilitation Guide (Quick) (Google Drive)** (highlighted in orange)
- What is AI? Facilitation Guide (Detailed) (Google Drive)
- Data Unit Plan (Google Drive)

The sidebar also shows "12 / 22 lessons completed" and rating stars.



Curriculum Overview: Teacher Resources

- For each unit
 - Unit plan
 - Quick unit overview
 - Detailed unit guide



The screenshot displays the AI4ALL Open Learning Program interface. At the top, there's a navigation bar with a back button, the text "Back to ExploreAI (30 hours)", and the "ai4-all.org" logo. Below the navigation bar, the main content area features a large orange header for "Unit 1: What is AI? Facilitation Overview (Quick)". The page includes a brief description of the unit, a section titled "Unit 1 Facilitator Resources" with a bulleted list of resources, and a "Unit 1 Overview" section with a note about detailed walk-throughs. To the right, a sidebar titled "Unit Plans and Facilitation Guides (30 Hours)" shows progress (12 / 22 lessons completed) and links to various facilitation guides and unit plans, all available on Google Drive. The footer of the main content area also features the "ai4-all.org" logo.

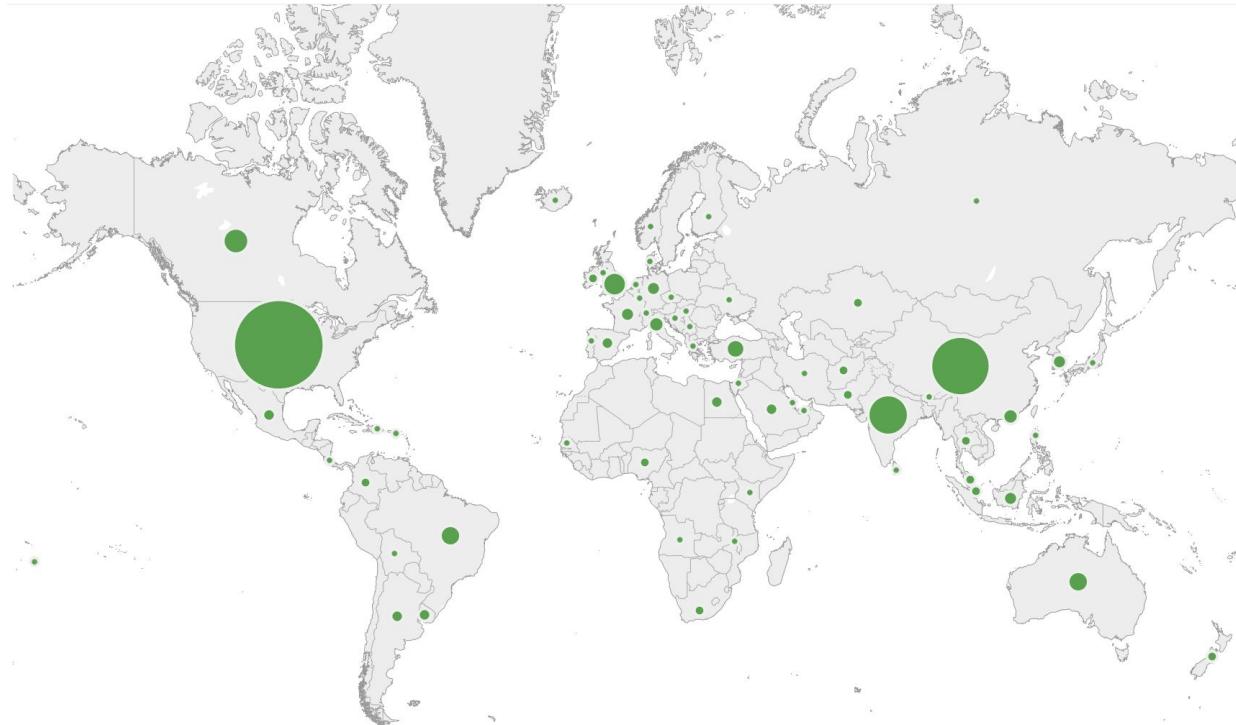


Looking ahead

So far

~750 total users

AI4ALL Country Distribution



So far

Name of Get Started Grant Partner	Where the partner is	Type of program
Montour High School	McKees Rocks, PA	Free block during school
West Middlesex Jr/Sr High School	West Middlesex, PA	Free block during school
Washington Leadership Academy	Washington DC	Saturday workshops
Young Women's Leadership Academy	Fort Worth, TX	After school club
Stockton Unified School District	Stockton, CA	After-school <i>and</i> in-school
Girl Scouts of Northeast Texas	Dallas, TX	Weekend workshop series
National Society of Black Engineers Jr. Bay Chapter	Oakland, CA and Pittsburgh, CA	After school club
Oakland Unity High School	Oakland, CA	In-school



The Future

- Alternating between programming units and conceptual, discussion-based units
- Currently working on a sentiment analysis curriculum
- Interest and project-based
 - AI for art using GANs?
 - AI for medicine using image recognition?
- What would you like to see?





AI Will Change the World, Who Will Change AI?



Olp.ai-4-all.org

bit.ly/OpenLearningPartners