Ethical Engineer

TOOLBOX OF DIGITAL TOOLS

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2024
Toolbox of Recommended Digital Tools

By
ACEEU

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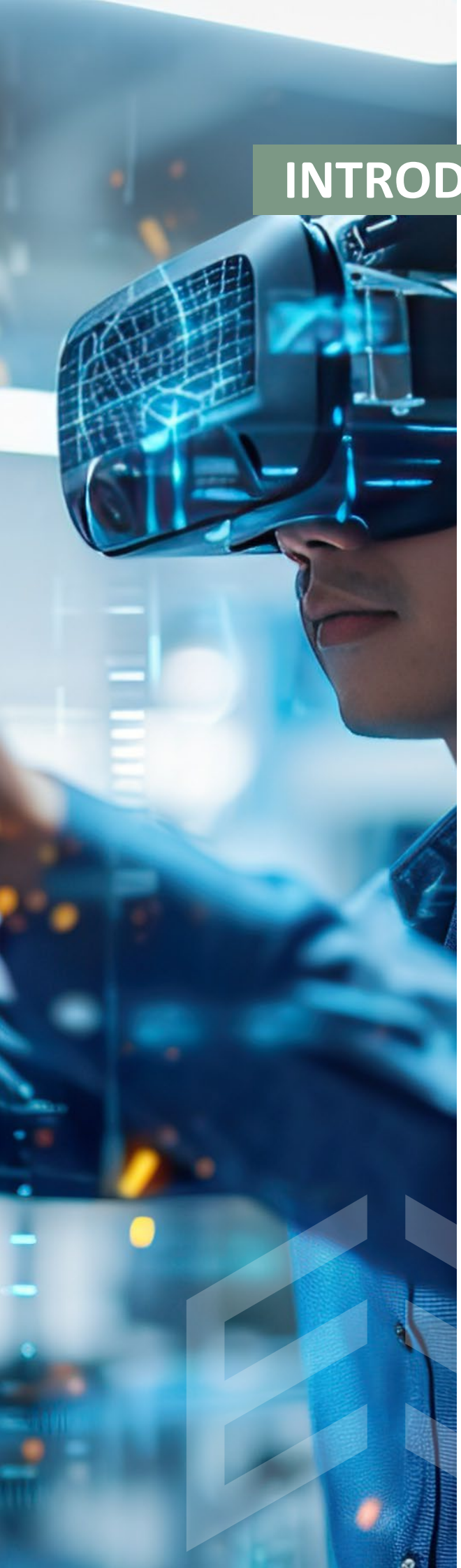
As part of the **Ethical AI Case Studies & Starter Kit**, the Toolbox of Recommended Digital Tools is a collection of 15 digital tools for educators to incorporate ethical AI into their courses. This resource is useful for all teaching formats: in-person, online, or hybrid.



INTRODUCTION

Overview

The Toolbox of Recommended Digital Tools is the third section of the Ethical AI Case Studies & Starter Kit. It features 15 curated digital tools with AI elements, and is designed to help educators integrated ethical AI into their courses. This versatile resource supports a range of teaching formats, including in-person, online, and hybrid classrooms.

Purpose

The Toolbox aims to improve educators' pedagogical skills by introducing them to new tools or new ways to understand tools with which they may already be familiar.

By using the Toolbox, engineering educators will become more aware of the ethical implications of using certain tools over others when teaching.

User Guide

The 15 digital tools are organized into **5 categories based** on classroom use

01 Inclusion + Accessibility

02 Interactive Participation

03 Lesson Planning

04 Feedback + Grading

05 Engineering Coursework

The tools can be used independently of one another, or in various combinations

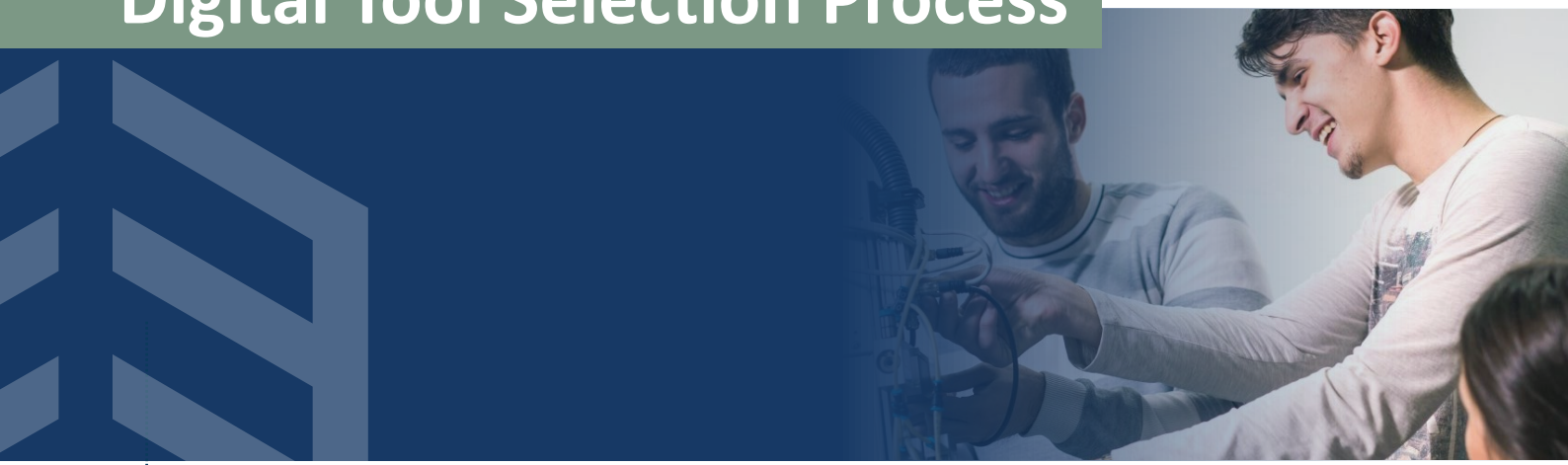
Each tool includes a general description (noting accessibility features or other special features), link to tool, accessibility features, ethics meter rating, instructions for use, and links to external tutorials.

The three tools included specifically for engineering coursework have tips for teachers to incorporate them into the classroom to facilitate ethical discussions. They are connected to ethical AI topics such as fairness, accountability, societal impact, transparency, and regulatory compliance.

The addition of the ethics meter provides further instruction by example, as it demonstrates one means of ethically evaluating digital tools. The Toolbox of Recommended Digital Tools has been integrated into the Ethical Engineer website and can easily be used online, or it can be downloaded and used as a locally-saved PDF.

Users should be aware that the tools and tutorials are both externally created and hosted. Ethical Engineer cannot guarantee that they will remain active, nor does it have control over the privacy and security policies of the sites.

Digital Tool Selection Process



The tools were selected based on the following criteria

01 Access: Users do not need special equipment, permissions, or knowledge to access these resources.

02 Cost: The basic level of all tools is free of charge. For tools that do cost money, the pricing is considered reasonable.

03 User-friendliness: The tools are easy for a user without advanced digital skills (including AI knowledge) to use.

04 Bias: Our understanding of bias for this Toolbox is not regarding AI, but rather representation via pronouns, language, visual images.

05 Ethics Meter: Only tools meeting a minimum medium-level (from the levels low, medium, high) on the ethics meter are included in the toolbox.

Ethics Meter

The **Ethics Meter** considers **four ethical criteria** related to AI application:

01 Transparency / Explainability

02 Accountability

03 Societal Impact

04 T.O.S. / Privacy

Each criterium is ranked low, middle, or high level of achievement and the average level across all criteria is used as the ranking on the ethics meter.

Only tools which achieve a minimum “medium” level are included in the Toolbox. The websites for each tool (including “about pages”) as well as external resources were used to determine the level of achievement of ethical criteria.

NOTE

Although other ethical criteria (e.g. safety and reliability; fairness/bias) would be interesting to evaluate, that information is not always openly available at present. Therefore, including said criteria in the Toolbox would not be representative across all tools and ultimately not a useful measurement for the overall level of ethical achievement.

Transparency/Explainability

Disclosure of which AI models are used and any limitations. The tool is open about how user input is used, including how use is applied for further training of the tool.

Accountability

The provider has a clear channel for feedback. The creators of the tool are clearly specified.

Societal Impact

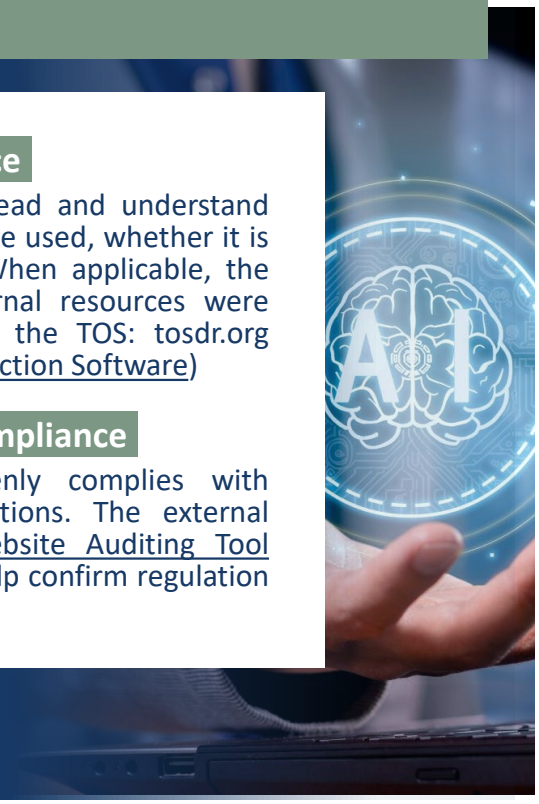
The tool has specific uses that positively impact society.

Terms of Service

It is easy to read and understand how data will be used, whether it is shared, etc. (When applicable, the following external resources were used to verify the TOS: tosdr.org and EDPS Inspection Software)

Regulatory Compliance

The tool openly complies with existing regulations. The external tool EDPB Website Auditing Tool was used to help confirm regulation compliance.

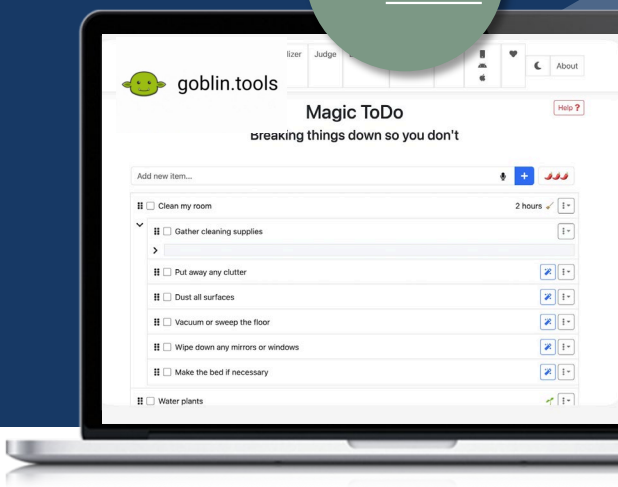


01 Goblin Tools

A set of seven user-friendly, simple tools to tackle a variety of tasks using AI technologies in the back-end. The specific tools are: Magic ToDo, Formalizer, Judge, Professor, Estimator, Compiler, and Chef. Goblin Tools could be helpful for teachers and students who need assistance managing tasks (by breaking a larger task down into smaller ones or estimating how long certain activities will take), judging or changing the tone of a comment, or breaking down text in either a more detailed or a more simplified way.

Outputs from Goblin Tools can be easily exported and saved. Unfortunately, the maximum content input (prompt) for each tool is restricted, forcing the user to either limit the data entered or input the data in installments. This resource was especially intended to help people who are neurodivergent.

CLICK TO **VIEW**



Accessibility Features

Goblin Tools was designed with accessibility in mind! The tools give users the option to type or speak their prompts, change the website to light or dark mode, and change level of support needed (the "spicy meter" ranges from 1 through 5 and offers more specific, strongly worded, or simplified results based on the tool task).

Ethics Meter

High

How to Use

1. Go to the webpage goblin.tools.
2. Click on the tool you would like to use. For example, Magic ToDo. There are 7 specific tools available.

Customizing Outputs

Use the "spicy meter" (1–5) to control the level of specificity or tone of the response

Core Features

- **Magic ToDo:** Break down tasks into subtasks, refine them further, and get time estimates.
- **Formalizer:** Adjust the tone of text (e.g., formalize or simplify).
- **Judge:** Assess the tone of a comment or feedback.
- **Professor:** Simplify or elaborate on text for clarity or detail.
- **Estimator:** Estimate the time required for specific tasks.
- **Compiler:** Combine and organize multiple inputs.
- **Chef:** Break down cooking or other step-by-step instructions.

Exporting Results

Click the "Export" icon to save, copy, or print outputs.

Links to Tutorials

- Kummer, B. (2023, November 6). Goblin Tools Ai Tutorial: Support for Executive Function, Tasks, Writing, and More.Youtube. https://www.youtube.com/watch?v=zx1wseZTMH0
- AI in Education- Generative AI Tools and ChatGPT. (2023, July 21). GoblinTools. Youtube. https://www.youtube.com/watch?v=RXK0L_-J8Rk

02 Mentimeter

Mentimeter is an interactive presentation tool that allows users to create engaging presentations with features like polls, quizzes, word clouds, Q&A sessions, and more. Designed for both in-person and remote audiences, it facilitates real-time audience interaction by collecting responses through participants' devices, making presentations more dynamic. It promotes inclusivity by giving all participants, including shy or hesitant individuals, a chance to engage anonymously, ensuring all voices are heard. This fosters a safe environment for different perspectives and open dialogue.

Accessibility Features

Creating an account is required to build and manage presentations. Participants, however, do not need an account to join and respond to presentations; they simply enter a code or use a QR link provided by the presenter. Moreover, the platform offers a free version with limited features. More advanced features are available in paid plans.

Ethics Meter

Medium

How to Use

1. Go to Mentimeter and create an account.
2. Choose a free or paid plan depending on your needs.
3. Log in and click the “New Presentation” button. Name your presentation to start building slides.

Customizing Outputs

Set time limits for answering questions or shuffle response options to keep engagement dynamic by using the advanced question settings.
Mentimeter saves your work automatically. Export audience responses as Excel or PDF files.

Core Features

- **Interactive Slides:** Choose from various question types, including multiple choice, word clouds, quizzes, scales, and open-ended questions. Add poll questions to collect instant audience feedback.
- **Presentation Tools:** Use Mentimeter as a live presentation tool where audiences participate in real time. Share the unique voting code or link (displayed at the top of the slide) with your audience.
- **Templates:** Explore a library of pre-built templates for different purposes like team meetings, classroom activities, or workshops.
- **Quizzes and Gamification:** Add quiz slides to engage audiences and track their responses. Display leaderboards to increase competition and participation.

Other Features

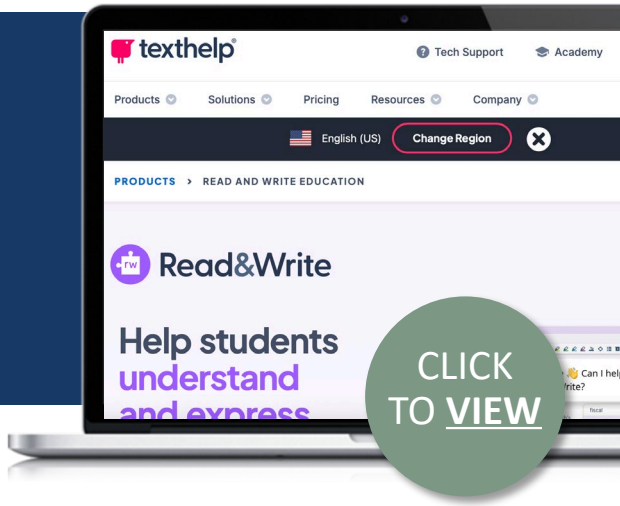
Audience Insights: Track participation levels and response trends with built-in analytics. Enable the Q&A feature to allow audience members to ask questions during the presentation.

Links to Tutorials

- How to Easy. (2022, October 13). How To Use Mentimeter - Mentimeter Tutorial For Beginners (2023). Youtube. https://www.youtube.com/watch?v=eTjLDsvvyIM
- Mentimeter. (2022, July 29). How to Create Your First Mentimeter Presentation - 7 Minute Crash Course Tutorial. Youtube. https://www.youtube.com/watch?v=on_Ib7SP6Go

03 Read&Write by Texthelp

Read&Write is a literacy support tool that offers help with everyday tasks like reading text out loud, understanding unfamiliar words, researching assignments and proofing written work. This tool help students with learning disabilities, literacy challenges and those students who have Individualized Education Programs (IEPs). Read&Write allows them to understand and engage with the content of every lesson alongside their peers.



Accessibility Features

Users need to sign up for an account. It offers both free trials and subscription plans, with pricing details available on their website

Ethics Meter

High

How to Use

1. Visit the Texthelp website and download the appropriate version for your platform (Windows, macOS, Chrome, or iPad). Follow the installation prompts.

Customizing Outputs

1. Adjust text and background colors for better readability.
2. Enable the "Screen Mask" to highlight a single line of text for focused reading

Exporting or Saving

1. Highlight key sections of text using different colors. Use the "Collect Highlights" feature to gather all highlighted text into a separate document, such as a Word, PDF, or Google Docs file.
2. Use the "Audio Maker" tool to create audio files from your text for offline listening.

Core Features

- **Text-to-Speech:** Highlight the text you want to hear and click the play button. Adjust the reading speed, voice type, and volume in settings.
- **Word Prediction:** Begin typing, and suggested words will appear. Click on a suggested word to insert it into your text.
- **Dictionary & Picture Dictionary:** Select a word and click the dictionary icon to view definitions. Use the picture dictionary for visual aids to enhance comprehension.
- **Check It (Spell and Grammar Check):** Click the "Check It" button to review and correct spelling and grammar issues in your text.
- **Speech-to-Text:** Click the microphone icon, speak into your device, and your words will appear on the screen

Other Features

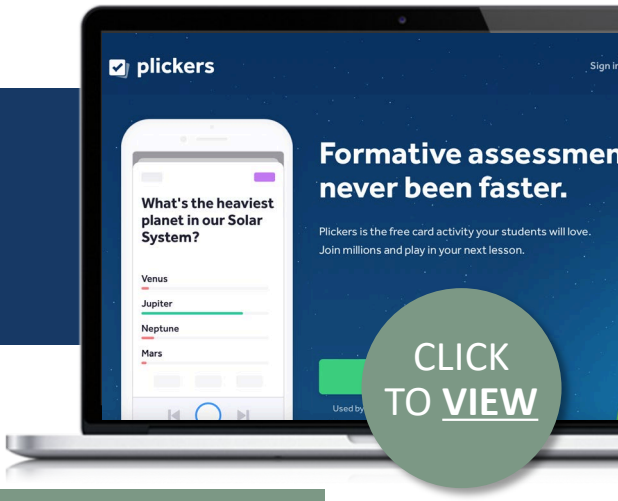
- **Screen Masking:** Use this feature to focus on one section of the screen while dimming the rest.
- **Vocabulary List Creation:** Highlight key words in a text and use the "Vocabulary" button to generate a customized list with definitions and images.
- **Translator:** Highlight text and click the translation icon to see a translation in your preferred language.
- **PDF Reader:** Use the PDF reader feature to annotate, highlight, and add comments directly to PDF files.

Links to Tutorials

- Stanford Learning Lab. (2021, December 3). Read&Write Tutorial. Youtube. https://www.youtube.com/watch?v=2trxa-C7bi4
- Texthelp. (2022, December 16). Read&Write: Back to Basics. Youtube. https://www.youtube.com/watch?v=oVfeWdqUuvU

04 Plickers

Plickers is an interactive and engaging educational tool for teachers to assess their students and collect instant results in the classroom. This tool is ideal for activities, multiple-choice quizzes, and polls.



Accessibility Features

Teachers have access to a free account. Students answer questions by holding up unique cards, so there's no need for student devices or accounts, and sessions can even be taken offline if no internet connection is available.

Ethics Meter

High

How to Use

1. Go to Plickers and create a free account. You can also use the Plickers mobile app, available for iOS and Android.
2. Once logged in, go to the Classes tab and create a new class. Add your students' names so you can assign them unique Plickers cards.
3. **Download and Print Plickers Cards:** Navigate to the Cards section on the website. Download the free PDF of Plickers cards. Print them on sturdy paper or laminate them for durability. Each card has a unique QR code for student responses.
4. **Install the Mobile App:** Download the Plickers app on your smartphone or tablet. The app will allow you to scan the Plickers cards and collect responses in real-time.
5. For interactive lessons, connect your computer to a projector or smartboard to display questions and live results.

Customizing Outputs

Adjusting Class Settings: Edit student names and assign specific Plickers cards to ensure accurate tracking. Use different classes for separate groups to keep responses organized.

Core Features

- **Create and Deliver Questions:** Use the Library tab to create multiple-choice or true/false questions. Assign questions to a specific class or save them in your library for later use.
- **Real-Time Response Collection:** During class, display the question on the board and have students hold up their Plickers cards with the correct side facing up (A, B, C, or D). Use the Plickers app to scan the room and instantly collect responses.
- **Live Results Display:** Display a live bar chart of student responses on the board to encourage class discussion.
- **Student-Specific Tracking:** Responses are tied to individual students, allowing you to track progress and participation.

Exporting or Saving

Scanned responses are automatically saved to your account. View results under “Reports.” Download results is CSV format to share with other educators.

Other Features

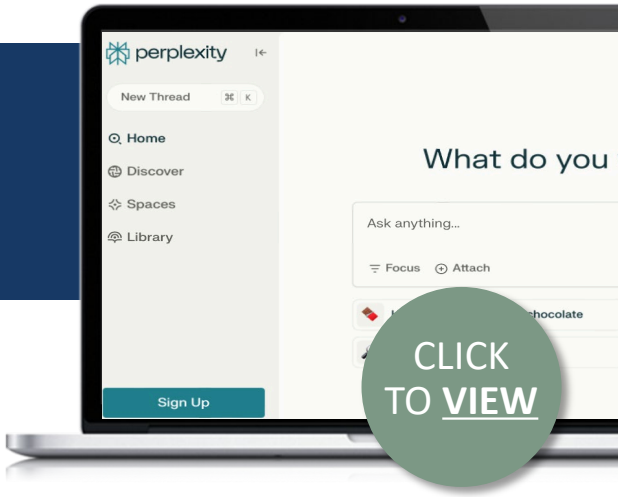
Engagement Features: Use Plickers to conduct quick polls, quizzes, or icebreaker activities to keep students engaged.

Links to Tutorials

- teachblend. (2021, December 2). How to use Plickers - Teacher Guide. Youtube. https://www.youtube.com/watch?v=iV7Fhn5dFuo
- La lengua con TIC entra (blog de Quique Castillo). (2021, April 23). Guía rápida de PLICKERS (en 5 minutos) [abril de 2021]. Youtube. https://www.youtube.com/watch?v=FrSLEAuN--Y

05 Perplexity

Perplexity is an AI-powered search engine and knowledge assistant designed to provide accurate, comprehensive, and context-aware answers. It analyzes questions and generates responses while citing various sources.



Accessibility Features

It aims to make complex information accessible, concise, and easy to understand, catering to both casual users and professionals seeking detailed insights. It is free to use but also provides a paid professional option if needed

Ethics Meter

High

How to Use

1. Visit perplexity.ai and create an account if you want to use advanced features.
2. Input your query into the search bar - be specific! Perplexity will generate an answer from relevant sources.
3. Click on the original source links for further reading.

Customizing Outputs

Use follow-up questions or clarifications to improve precision of results.

Exporting or Saving

If logged in, save searches for later by bookmarking them in your account

Core Features

- **Source Transparency:** Each result includes links to its sources, allowing you to verify and explore the information further.
- **Trending Topics / Suggestions:** Perplexity highlights trending or popular topics, making it easy to explore current events.
- **Multi-Language Support:** Responds to queries in multiple languages, broadening its usability for non-English speakers.

Other Features

- Minimalist design ensures ease of use for casual or advanced users.

Links to Tutorials

- Jeff Su. (2024, September 17). Learn 80% of Perplexity in under 10 minutes!. Youtube. https://www.youtube.com/watch?v=YoWdogtZRw8
- Corbin Brown. (2024, February 2). How To Use Perplexity AI For Beginners. Youtube. https://www.youtube.com/watch?v=qpN-pjev-vM

06 Jitsi

Jitsi is a set of open-source projects designed to facilitate the creation and deployment of secure video conferencing solutions. It is best known for the Jitsi Meet platform, where the community can host free video conferences, and the Jitsi Videobridge, that powers its multi-party video capabilities.

Accessibility Features

It is free, no registration is needed for meetings.

Ethics Meter

High

How to Use

1. Go to Jitsi Meet on your browser or download the Jitsi app for iOS or Android if you are using a mobile device.

Customizing Outputs

- **Change Meeting Settings:** Access meeting settings via the three-dot menu for options like enabling lobby mode, adding a meeting password, or adjusting participant permissions.
- **Virtual Backgrounds:** Blur your background or replace it with a virtual image for more privacy.
- **Moderator Controls:** Assign a moderator role to manage participants, mute others, or remove disruptive attendees.
- **Custom URL:** Use Jitsi's custom URL feature to create a memorable meeting link (available through integrations or advanced setup).

Exporting or Saving

- **Record Meetings:** Click on the three-dot menu and select Start Recording.
- **Export Chat Logs**: Copy and save the in-meeting chat messages manually before ending the meeting.

Core Features

- **Video Conferencing:** Host secure, real-time video meetings for small or large groups.
- **Screen Sharing:** Share your screen to present slides, documents, or applications.
- **Chat Feature:** Use the in-meeting chat to share links, messages, or notes with participants.
- **End-to-End Encryption:** Enable end-to-end encryption for added privacy during your meetings.

Other Features

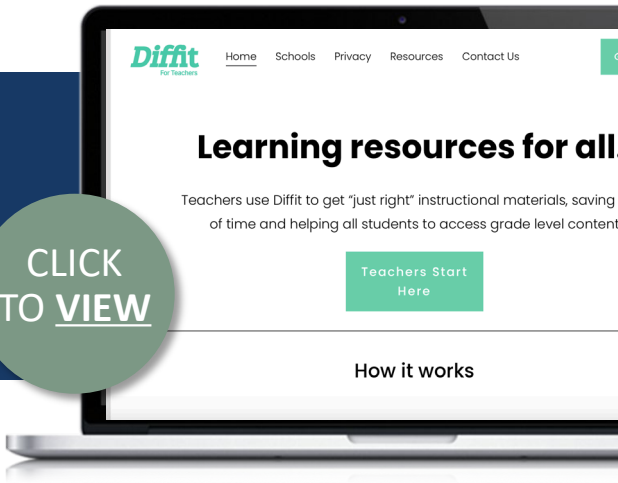
- **Breakout Rooms:** Create breakout rooms for group discussions or team activities.
- **Streaming**: Stream your meeting directly to platforms like YouTube for wider audiences.

Links to Tutorials

- Upstart Security. (2023, June 14). Jitsi Meet - 100% Free Video Conferencing. Youtube. https://www.youtube.com/watch?v=76dJZMNzP1I
- Vasker Media. (2023, January 18). How to setup, use, and optimize Jitsi Meet - full guide. Youtube. https://www.youtube.com/watch?v=GIJboDMnds8

07 Diffit

Diffit is an educational tool designed to adapt and differentiate materials for students with varying skill levels. It helps teachers plan their lessons by creating customized texts, questions, and vocabulary sets from any content source, ensuring these lessons are accessible and engaging for all learners.



CLICK TO **VIEW**

Accessibility Features

An account is necessary to use Diffit. Signing up is free, and creating an account unlocks access to both free and trial premium features.

Ethics Meter

High

How to Use

1. Visit Diffit on your web browser. No downloads are required. Access advanced features and save your work by creating an account and signing in.
2. Paste or upload your source content (e.g. text, documents, or URLs) into Diffit's workspace. Choose the type of resource you want to create (e.g. summaries, questions, or educational resources).

Customizing Outputs

- **Adjust Complexity Levels:** Use sliders or options to control the difficulty level of the output text or questions.

Exporting or Saving

Save projects directly to your account for future access. Download content in formats such as PDF, Word, or plain text. Share a link to resources directly with students or collaborators.

Core Features

- **Content Simplification:** Automatically simplify complex text for different audiences, such as younger students or language learners.
- **Generate Questions:** Create comprehension questions (multiple-choice, short-answer, or true/false) from text input to test knowledge and engagement.
- **Summarization**: Generate concise summaries of lengthy text while retaining key points.
- **Curriculum Alignment:** Tailor content to fit specific learning objectives or educational standards.

Other Features

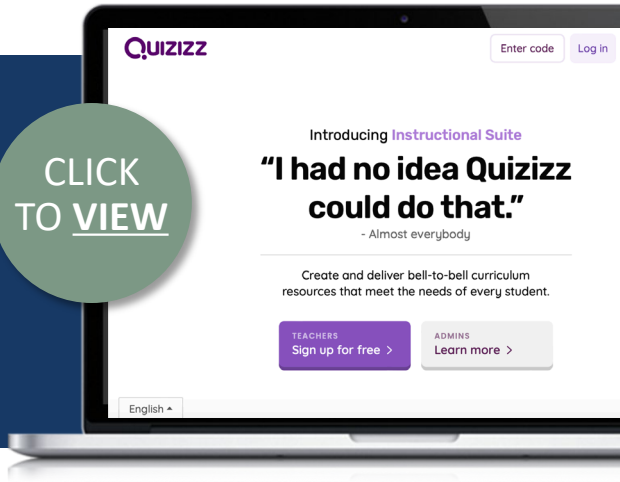
- **Multilingual Support:** Translate content or create resources in multiple languages to support diverse classrooms.
- **Content Tagging:** Add tags to your resources for easier organization and retrieval.
- **Analytics and Insights:** Track usage patterns or performance metrics to understand how resources are being utilized.

Links to Tutorials

- Diffit For Teachers. (2024, March 25). What is Diffit?. Youtube. https://www.youtube.com/watch?v=k6YL_IL1yg4
- New EdTech Classroom. (2024, February 26). Differentiate Any Resource with Diffit | AI for Teachers. Youtube. https://www.youtube.com/watch?v=nc0IyEkcSPI

08 Quizizz

Quizizz is an interactive online platform designed for creating and hosting quizzes, polls, and lessons. It gamifies learning experiences, making them engaging through features like real-time feedback, leaderboards, and customizable game modes. Educators plan their lessons and create their own quizzes or access a vast library of pre-made content across various subjects. Quizizz can be used for formative assessments, homework, or live classroom activities.



Accessibility Features

Quizizz offers both free and paid versions. Teachers need to create an account to use Quizizz for hosting quizzes, managing classes, and accessing detailed reports. Students can join quizzes without creating an account by entering a unique code provided by their teacher, making participation simple and accessible.

Ethics Meter

High

How to Use

1. Visit Quizizz and create an account as a teacher, student, or professional using your email or Google account.
2. Click "Create" on the dashboard and choose "Quiz". Add a title and select the appropriate audience (e.g., school, work, or personal). Or, use the search bar to find quizzes created by others in the Quizizz library.

Customizing Outputs

- **Question Bank:** Access a vast question bank to quickly add pre-made questions to your quiz. Mix and match questions from multiple quizzes.
- **Adjust Game Settings:** Personalize gameplay by enabling team mode, shuffling questions, or adjusting time limits for each question.
- **Language Options**: Create quizzes in various languages to cater to diverse audiences.

Exporting or Saving

Quizzes are saved automatically to your account and can be edited at any time. Share quizzes with students or colleagues via a link, code, or directly to platforms like Google Classroom.

Core Features

- **Quiz Creation:** Add multiple-choice, open-ended, poll, fill-in-the-blank, and true/false questions. Include images, audio, or videos in your questions for an interactive experience.
- **Live Quizzes and Assignments:** Host live quizzes or assign quizzes as homework with deadlines for asynchronous participation.
- **Reports and Analytics:** View detailed reports on student performance, including accuracy, speed, and question-specific results.
- **Gamification:** Quizizz uses points, leaderboards, and power-ups to engage participants and make learning fun.

Other Features

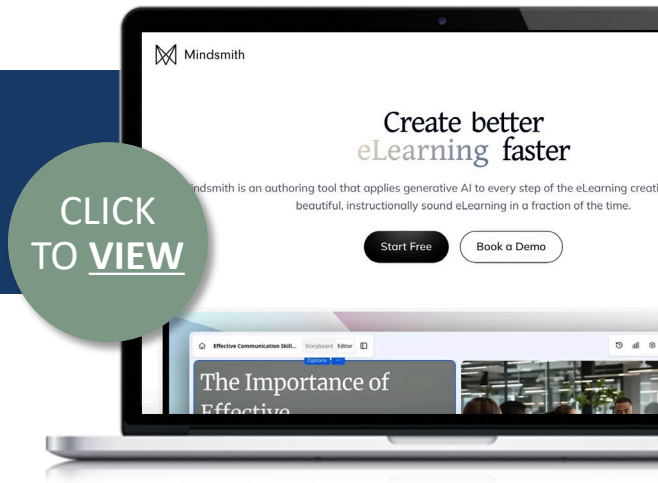
- **Flashcards and Study Tools:** Offer flashcards for self-paced study to help students review key concepts.
- **Collaborative Quizzes**: Collaborate with other teachers or colleagues to create and share quizzes.

Links to Tutorials

- Mark O'Donohue. (2022, November 22). How to use Quizizz: Full tutorial for teachers!. Youtube. https://www.youtube.com/watch?v=52Y0FUNjNBs
- Quizizz. (2024, October 22). How to teach with the Quizizz Instructional Suite. Youtube. https://www.youtube.com/watch?v=v6SiQ76nMA8

09 Mindsmith

Mindsmith is an advanced eLearning authoring tool that leverages generative AI to facilitate lesson planning, as well as the rapid creation and sharing of customized learning content.



Accessibility Features

Mindsmith offers a free plan that includes unlimited lesson creation. However, the free version limits sharing to two lessons. To unlock more sharing options, users can upgrade to the Professional or Team plans.

Ethics Meter

Medium

How to Use

1. Visit Mindsmith and create an account using your email or Google credentials.
2. From the dashboard, click "Create New" to start a course or learning module. Add a title and description for your course to set the context. Or, browse through Mindsmith's template library for pre-made lesson structures and content ideas.

Customizing Outputs

Customize how learners navigate your course, such as enabling self-paced learning or timed progressions.

Exporting or Saving

- Mindsmith auto-saves your work to ensure you don't lose any progress.
- Download your course materials as PDFs or share them digitally through a unique link.

Core Features

- **AI-Assisted Content Creation:** Input key ideas or concepts, and Mindsmith will provide suggestions and layouts.
- **Content Structuring:** Organize learning materials into sections, slides, or modules. Include text, images, videos, and interactive elements for a comprehensive experience.
- **Collaboration Tools:** Invite team members or collaborators to work on projects together in real time.
- **Interactive Assessments:** Create quizzes, polls, or reflection questions to assess learner understanding.

Other Features

- **Analytics and Reports:** Track learner progress, quiz performance, and module completion rates. Use this data to refine content and address learning gaps.
- **Multilingual Support:** Create and translate course content into multiple languages for diverse learners.

Links to Tutorials

- Mindsmith. (2024, July 17). How to use the Mindsmith AI generator. Youtube. https://www.youtube.com/watch?v=CK4T7nOIxkE
- Mindsmith. (2024, July 17). How to Use the Mindsmith Editor and AI Assistant. Youtube. https://www.youtube.com/watch?v=hviEJQ6tyMc

10 Ziplet

Ziplet is a digital check-in tool primarily designed to allow teachers to gather quick feedback from students through simple, easy-to-use questions. Teachers can send questions to students, collect responses instantly, and analyze data through features like word clouds and response charts. It integrates seamlessly with platforms like Google Classroom and Microsoft Teams, making it easier for teachers to manage and track feedback from students.

Accessibility Features

Ziplet is free to use with a basic plan, allowing teachers to create up to three classes and send unlimited questions. To unlock additional features such as unlimited classes, templates, and advanced data analysis tools, users can opt for a paid Ziplet Plus plan.

Ethics Meter

High

How to Use

1. Visit Ziplet and create an account using your email, Google, or Microsoft credentials. Choose your role (e.g. teacher or team leader) to customize your experience.
2. From the dashboard, click "Create Class" to set up a group for your students or team members. Share the class code or invite participants directly via email.
3. To create questions, select "New Question" and choose from various question types like open-ended, multiple-choice, or rating scales.

Customizing Outputs

Class or Group Settings: Configure participant permissions, such as whether they can reply anonymously or view others' responses.

Exporting or Saving

- Ziplet automatically saves all responses to your account for easy access.
- Download responses as CSV or Excel files for further analysis or reporting.

Core Features

- **Quick Feedback Questions:** Use pre-designed templates or create your own questions to collect feedback quickly.
- **Anonymous Responses:** Enable anonymous answering to encourage honest and open feedback.
- **Response Insights:** View responses in real-time with visual summaries such as graphs or lists. Filter responses by participant or question type for deeper analysis.
- **Scheduled Questions:** Schedule questions to send at a later date or recurring intervals.

Other Features

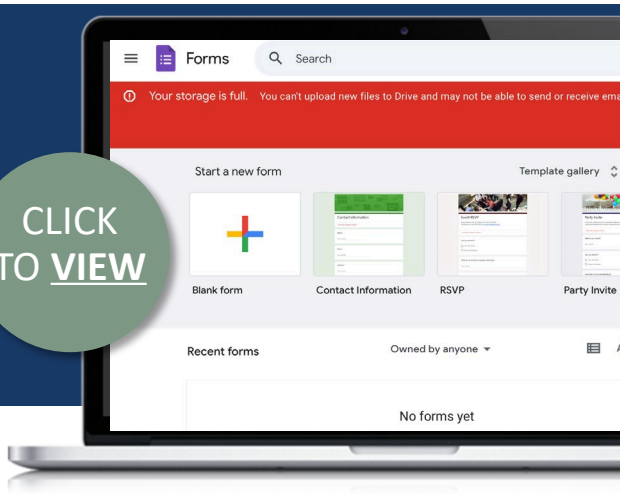
- **Templates and Examples:** Access a library of question templates designed for education, well-being, or workplace use.
- **Participant Progress Tracking:** Monitor how participants engage with questions over time to track well-being or skill development.

Links to Tutorials

- Ziplet. (2021, August 18). Getting started with Ziplet. Youtube. https://www.youtube.com/watch?v=KudMUco_KsA
- Ziplet. (2022, August 15). 3 Ways to transform your classroom with Ziplet. Youtube. https://www.youtube.com/watch?v=jSYapzqoqdw

11 Google Forms

Google Forms is a web-based tool from Google that allows users to create custom surveys, quizzes, and feedback forms. It's widely used in educational settings to collect student responses, conduct formative assessments, and facilitate real-time feedback. Integration with Google Classroom enhances its utility for managing assignments and analyzing data.



Accessibility Features

It is free to use. Moreover, it offers several accessibility features, including screen reader compatibility and keyboard navigation support, making it usable by individuals with visual or motor impairments. It also works well with various assistive technologies and has a simple, clean interface that is easy to navigate.

Ethics Meter

Medium

How to Use

1. Go to Google Forms and log in with your Google account to create or access forms.
2. Click the "+" (Blank Form) to start a new form. Alternatively, choose a template from the template gallery to save time. Click near the top to name your form and provide a description or instructions for respondents. Click "Send" in the top-right corner to share the form via email, a link, or embed it in a website

Customizing Outputs

Class or Group Settings: Adjust settings to collect email addresses, restrict responses to one per person, or shuffle question order.

Exporting or Saving

Responses are saved automatically in Google Forms and can be viewed at any time. Export responses as a CSV file for use in other tools. Use the print option to create a hard copy or save the form as a PDF.

Core Features

- **Sections and Logic:** Divide your form into sections for better organization. Use conditional logic to direct respondents to different sections based on their answers.
- **Real-Time Response Collection:** View responses as they are submitted through the **"Responses"** tab. Responses are automatically saved in your Google account.

Other Features

- **Quiz Functionality:** Turn your form into a quiz by enabling **"Make this a quiz"** in the settings. Add answer keys, point values, and feedback for each question.
- **Automatic Notifications:** Set up notifications to receive an email whenever a new response is submitted.

Links to Tutorials

- NaSa Edu Hub. (2021, May 25). How To Create A Google Feedback Form. Youtube. https://www.youtube.com/watch?v=WWBtZ1HrH2A
- PvSecTech. (2022, January 20). Response Validation and Google Form Providing Automatic Feedback. Youtube. https://www.youtube.com/shorts/uTRuACWNiII

12 Poll Everywhere

Poll Everywhere is an interactive, real-time polling tool designed for use in educational and professional settings. It allows educators to create various question types, including multiple-choice, open-ended, and ranking polls, which students can answer using their smartphones, tablets, or computers. Responses can be visualized instantly in formats such as word clouds or charts, facilitating immediate feedback and classroom engagement.

Accessibility Features

The platform has a limited (4o participants) free version. Paid plans are better for larger class sizes or advanced features. An account is required for creating and managing polls, but students can participate using any device with a web connection with an account or app.

Ethics Meter

High

How to Use

1. Visit Poll Everywhere and create an account using your email, Google, or Microsoft credentials.
2. From the dashboard, click "Create" and select the type of activity you want (e.g., multiple-choice, word cloud, Q&A). Name your activity and add your question or prompt.
3. Share the unique link or activity code with your audience for live participation. Participants can respond via their browser, mobile device, or SMS (if enabled).

Exporting or Saving

- Poll Everywhere automatically saves your created activities in your account for reuse.
- Download response data as a CSV or Excel file or export as PDF documents. Share live results directly via a link or embed them in emails, websites, or reports.

Core Features

- **Multiple Choice:** Poll participants with pre-set answers.
- **Word Cloud:** Visualize audience responses in real-time.
- **Q&A:** Allow participants to ask questions and vote on others' submissions.
- **Rankings:** Let participants rank options in order of preference.
- **Clickable Images:** Use images with clickable areas for interactive polls.
- **Real-Time Results:** See audience responses displayed instantly on your screen or embedded in presentations.
- **Integrations:** Embed activities directly into PowerPoint, Keynote, or Google Slides for seamless presentations.
- **Live Moderation:** Moderate responses before they are displayed to ensure appropriate content.

Customizing Outputs

Responses: Set time limits for activities to keep engagement high.

Other Features

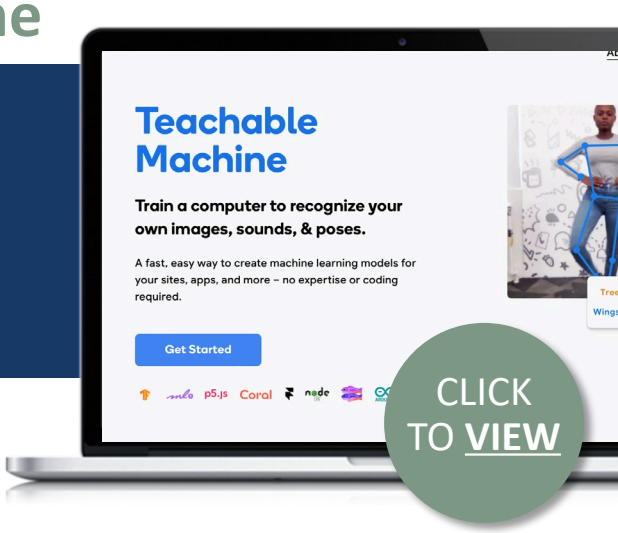
- **Audience Segmentation:** Group participants to analyze responses based on categories like location, role, or demographics.
- **Advanced Analytics:** Access in-depth reports to track engagement, response trends, and individual participation.

Links to Tutorials

- Technology for Teachers and Students. (2017, March 27). Poll Everywhere Tutorial. Youtube. https://www.youtube.com/watch?v=469WNkd_BqY
- Poll Everywhere. (2023, November 6). Getting Started for Instructors. Youtube. https://www.youtube.com/watch?v=wdg2k0ma9Qw

13 Google Teachable Machine

Google Teachable Machine is an easy-to-use, web-based tool that enables users to create machine learning models without needing coding experience. It allows individuals to train custom models for tasks like image, audio, and pose recognition by providing labelled data or capturing input through a webcam or microphone.



Accessibility Features

Teachable Machine is designed to be highly accessible, requiring only a web browser. Its intuitive interface makes it easy for users of all ages and technical backgrounds to get started. The platform supports accessibility features like visual and audio feedback during the training process, making it suitable for users with different learning needs. It is compatible with various devices, ensuring accessibility across desktops, laptops, and mobile platforms.

Ethics Meter

Medium

How to use

1. Visit Google Teachable Machine on your web browser. Select from the available project types: 1) Image Project: Train models to classify images, 2)Audio Project: Train models to recognize sounds, or 3) Pose Project: Train models to detect body positions or movements.
2. Create classes for your model. For example, if you're creating an image classifier, each class represents a category you want your model to identify. Use your webcam, microphone, or upload files to provide examples for each class. Aim for a balanced dataset with multiple examples for each class.

Core Features

- **Data Collection:** Collect images, audio, or pose data directly using your device's webcam or microphone or upload files to include pre-recorded examples.
- **Model Training:** Click "Train Model" to let Teachable Machine process your data and create a machine learning model. Training happens locally in your browser, ensuring privacy.
- **Real-Time Testing:** Test your model in real time by providing new input to see how well it recognizes each class.
- **Export Options:** Export your trained model for use in apps, websites, or other tools.

More on the next page

Links to tutorials

- Experiments with Google. (2019, November 7). Teachable Machine Tutorial 1: Gather. Youtube. https://www.youtube.com/watch?v=DFBbSTvtpy4
- Google for Developers. (2017, October 3). A.I. Experiments: Teachable Machine. Youtube. https://www.youtube.com/watch?v=3BhkeY974Rg&list=PLEz9y19-UrRaouJ6C_xyfVWT7fq9Mra5J

13 Google Teachable Machine

Customizing Outputs

- **Adjust Training Parameters:** Modify the default training parameters, such as the learning rate or epochs, for better model accuracy.
- **Augment Data:** Use data augmentation (e.g., flipping, rotating, or scaling images) to improve your model's robustness.
- **Input Settings:** Customize how data is captured, such as adjusting the sensitivity of your microphone or the resolution of your webcam.

Exporting or Saving

- Use the "Save Project" option to download your project file and reopen it later.
- Export models in various formats including TensorFlow.js (for use in web applications), TensorFlow Lite (for use in mobile or embedded systems), or ONNX (for broader compatibility with other machine learning tools).

Other Features

- **Interactive Demos:** Use Teachable Machine's built-in testing panel to demonstrate your model's capabilities.
- **Collaborative Projects:** Share your project files with others so they can continue training or using your model.

Tips for Teachers

Teachable Machine is a great way to introduce the concept of "**fairness**" in the classroom.

A few steps to implement this resource:

1.) Introduce the concept of data training and model bias in machine learning.
2.) Show students how Google Teachable Machine works and explain the basic functions.
3.) As a class or in groups, build a simple image classifier using limited, biased data (e.g. only certain objects or faces).
4.) Test the model and take notes on the inaccuracies or biases.
5.) Discuss the ethical implications of the tool, focusing on bias and fairness.

For student reflection:

- What changes could be made to make the model more fair?
- What is the responsibility of the model designer when applying this system in the real world?
- What does the user need to know?

Fairness

In order for AI systems to make decisions that are just, unbiased, and equitable for all individuals and groups (especially across different demographics like race, gender, age, or ability), the data input into the algorithm needs to be diverse and representative. Further, the data needs to be audited, creators need to test for bias, and the AI needs to be continuously monitored and improved as necessary.

14 Ethical OS Toolkit

The resource contains tools for visualizing and anticipating future risk of technology products, acknowledging that once technology is released and reaches scale it may be used for purposes beyond the original intention. The toolkit contains foresight methods, including 14 scenarios, for kicking off important conversations with product teams--including examples of current signals of future trends. It also contains a Risk Mitigation Manual with 8 risk zones where hard-to anticipate and unwelcome consequences are most likely to emerge. Finally, it contains 7 suggested strategies for future-proofing.

Accessibility Features

The toolkit is primarily web-based and does not require an account to access.

Ethics Meter

High

How to use

1. Visit the Ethical OS Toolkit and download the toolkit (PDF or digital version) or use the interactive version on the website.
2. The Ethical OS Toolkit helps individuals, teams, and organizations design technology with a focus on ethics, privacy, and long-term societal impact. It guides you to anticipate potential risks and unintended consequences of technology.

More on the next page

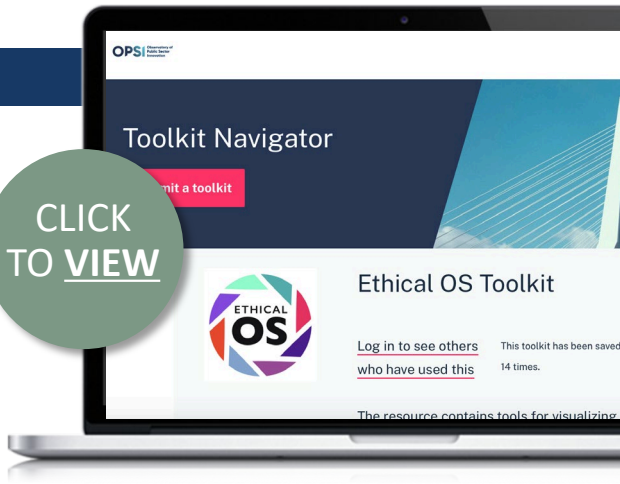
Core Features

- The **core framework** consists of 8 "futures" lenses that help guide ethical decision-making for technology development:
  1. **User Impact:** Assess how your product impacts users.
  2. **Vulnerabilities:** Identify potential risks for your users or society.
  3. **Stakeholders:** Consider all the people and entities affected by the technology.
  4. **Systemic Risk:** Evaluate potential unintended consequences.
  5. **Bias:** Detect possible bias in the design and application of your tech.
  6. **Justice:** Evaluate how equitable your technology is.
  7. **Well-being:** Focus on mental, social, and physical health effects.
  8. **Long-Term Impact:** Consider how your tech will evolve in the future.
- **Vulnerability Mapping:** Map out areas of potential harm or vulnerabilities across the product lifecycle to help ensure that ethical risks are identified early in the design phase.
- **Scenario Planning:** Use scenario planning exercises to explore the different futures that might emerge as a result of adopting certain technologies. This helps anticipate potential long-term consequences.
- **Action Steps**: The toolkit provides specific action steps you can take to minimize harm or address the risks identified during the process.

Links to tutorials

- Institute for the Future (IFTF). (2021, July 15). LEARN with IFTF: Playbook for Ethical Technology Governance. Youtube. https://www.youtube.com/watch?v=XfkolJT31TM

14 Ethical OS Toolkit



Exporting or Saving

- Download a copy of the Ethical OS Toolkit in PDF format to use offline. Save your notes and findings in an editable document or spreadsheet for further review and updates.
- Create and save an action plan based on the vulnerabilities and risks identified during the ethical evaluation process. As you progress with your project, keep updating your action plan with new insights or changes. You can track the effectiveness of the mitigation steps you've implemented.

Customizing Outputs

- Use the toolkit in team workshops where groups collaboratively assess ethical risks and brainstorm mitigation strategies. The toolkit includes facilitator guides for running effective workshops.
- Experiment with looking at your product through different ethical "lenses" to see potential issues you might otherwise overlook. For example, use the **Long-Term Impact** lens to evaluate how your technology might affect society decades into the future.

Other Features

- **Interactive Tools:** Use the interactive version of the toolkit to walk through the ethical decision-making process step by step. It offers suggestions and prompts to guide the analysis of ethical issues in your project.
- **Case Studies:** The toolkit includes real-world case studies to illustrate how ethical issues can arise in technology and how they were addressed. Use these case studies to learn from others' experiences.

Tips for Teachers

Ethical OS Toolkit is a great way to introduce the concept of "**accountability**" and "**societal impact**" in the classroom.

A few steps to implement this resource:

1.) Introduce the concepts of accountability and impact of AI systems.
2.) Explore the toolkit and review the 8 risk zones, focusing on areas like bias, disinformation, and inequality.
3.) Split the students into groups to analyze a real or fictional AI scenario using the toolkit. What risks are present? Who is accountable? What are the broader impacts?
4.) Have each group present their findings and facilitate a class discussion.

For student reflection:

- Who should be held accountable if an AI system causes harm?
- What role do designers/developers play in preventing negative social impacts?
- How might different stakeholders (users, companies, governments) view the risks differently?

Accountability

AI system designers need to establish clear responsibilities for the development, deployment, and use of AI systems. This includes offering clear mechanisms for user feedback.

Societal Impact

AI systems have the potential for broad and long-term effects on communities, institutions, and social systems. AI design should consider equity, access, public trust, behavioral shifts, and long-term consequences.

15 Deon by DrivenData

Deon is a command-line tool designed to simplify the integration of an ethics checklist into data science projects. It allows users to either create a new, standalone checklist file or append a checklist to an existing analysis in various common formats. The tool includes a default Data Science Ethics Checklist, which comes with real-world examples connected to each item. Users can either adopt this default checklist or customize it according to their project's specific needs.

Accessibility Features

It can be used on any platform with a terminal, making it accessible to users with knowledge of coding or terminal commands.

Ethics Meter

High

How to Use

1. Visit the Deon by DrivenData website. Follow the installation instructions provided to set up Deon on your *nix (Linux/macOS) system. Deon is a Python-based tool, so ensure you have Python and pip installed.
2. Install Deon using pip by running the following command in your terminal or command prompt: ***pip install deon***
3. In your project directory, run: ***deon init***
4. This command will create a .deon.yml file in your project folder, which will store your ethical guidelines. To check your project's ethical practices, run: ***deon***
5. Deon will assess your project against ethical criteria and provide a report based on its findings.

Core Features

- **Ethical Guidelines and Checks:** Deon provides a set of **ethical guidelines** related to machine learning, AI, and data science projects. These include: Data privacy and security, Model fairness and transparency, Accountability for outcomes, Social and environmental impact
- **Questionnaire for Ethical Considerations:** The tool offers a questionnaire based on established ethical frameworks. It evaluates how your project addresses these ethical principles, with questions like:
  - Does your project contain sensitive or biased data?
  - Have you considered the impact of your model on society?
- **Easy Integration:** Deon integrates easily into your existing machine learning project workflow. It can be run directly from the terminal, offering a simple interface to review ethical practices within your code.
- **Ethical Score Report:** After analyzing your project, Deon generates an ethical score report summarizing areas of concern, compliance, and suggestions for improvement.

More on the next page

Links to Tutorials

- Deon. (n.d.). An ethics checklist for data scientists.DrivenData. https://deon.drivendata.org/#quickstart
- Deon. (n.d.). Data ethics in the real world. DrivenData. https://deon.drivendata.org/examples/

15 Deon by DrivenData

Customizing Outputs

- **Custom Ethical Guidelines:** You can extend Deon's ethical guidelines by modifying or adding your own questions to the .deon.yml configuration file. This allows you to tailor the ethical checks to the specific needs of your project.
- **Custom Templates:** If you want to focus on specific ethical issues like **fairness or privacy,** you can create customized templates that align with your project's requirements.
- **Integrate with Project Workflow:** You can customize how Deon is used in your development workflow. For instance, automate running Deon checks as part of your **CI/CD pipeline** to ensure continuous ethical assessment.

Exporting or Saving

- **Save Ethical Assessment Reports**: Deon's output, including the ethical report, can be saved directly as a .json file or printed in a human-readable format. You can save the report using: ***deon --output report.json***
- Export the ethical report as a PDF or HTML document for sharing with stakeholders, team members, or for documentation purposes.

Other Features

- **Community-Driven Ethical Frameworks:** Deon's ethical checks are informed by the broader AI and data science community and are continuously updated to reflect new developments, best practices, and emerging issues.
- **Real-Time Feedback:** As you work on your project, you can run Deon multiple times to get real-time feedback on new or modified parts of your code. This ensures that ethical considerations are integrated throughout the development lifecycle.

Tips for Teachers

Deon by DrivenData is a great way to introduce the concept of "**transparency**" and "**regulatory compliance**" in the classroom.

A few steps to implement this resource:

1.) Introduce the AI ethics concepts of transparency and regulatory compliance.
2.) Have students install Deon using:
pip install deon
3.) Ask students to generate a default ethics checklist using:
ethdeon --checklist > ics_checklist.md
4.) Students can customize the checklist to focus on the transparency and regulatory compliance sections.
5.) Have students use an AI model project (e.g. facial recognition) to complete the checklist and identify ethical gaps.
6.) Facilitate a group discussion on the different ethical decisions.

For student reflection:
- Were there any items on the checklist that challenged your assumptions?
- How did the Deon tool influence your design?

Transparency

Also referred to as "explainability," transparent AI systems openly share and make understandable how the models function and make decisions.

Regulatory Compliance

New laws and regulations are being put in place to mitigate the potential negative impacts of AI systems. Legal compliance, including adhering to GDPR, helps ensure a minimum ethical standard.

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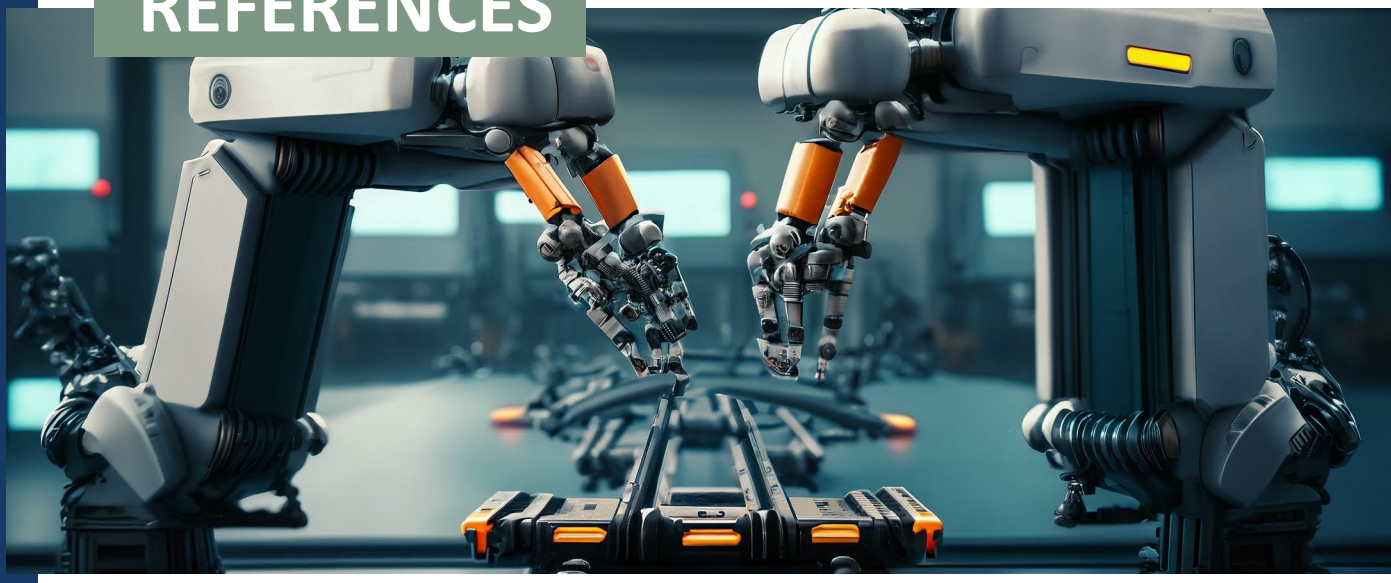

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