AI-Powered Tools at your Fingertips

AI has become the cornerstone of accessibility, profoundly impacting independence, access to information, skill-building, and employment. Consider these cutting-edge tools:

Transcription Tools Across Platforms

Windows

Dictation is built directly into Windows 11 via Windows + H. Live captions are available for real-time audio transcription.

Google (Chrome/Android)

Google Docs Voice Typing transcribes in real time on Chrome. Live Transcribe on Android provides real-time conversation transcription.

iOS (Apple)

Dictation is integrated into the keyboard on iPhones/iPads. Live Captions for FaceTime enhances communication accessibility in calls.

These tools are easily accessible on your devices without needing third-party applications.

Voice Commands

Here are examples of **integrated voice commands** on AI-powered technologies across Windows, Google, iOS, and Amazon platforms:

Windows

- **Cortana**: Microsoft's built-in voice assistant allows you to:
  - Set reminders and alarms.
  - Open apps or search for files using commands like "Hey Cortana, open Word."
  - Check the weather or news with "What's the weather today?"
  - Control smart home devices connected to your Microsoft account.

Google

- **Google Assistant**: Integrated into Android devices and Google services, it supports:
  - Sending messages or making calls: "Hey Google, send a message to [name]."
  - Managing schedules: "Add a meeting to my calendar at 3 PM."
  - Controlling smart home devices: "Turn off the living room lights."
  - Navigating: "What's the fastest route to [location]?"

iOS

- **Siri**: Apple's voice assistant is built into iPhones, iPads, and Macs, enabling:
  - Sending texts or making calls: "Hey Siri, text [name]."
  - Setting timers or reminders: "Set a timer for 10 minutes."
  - Playing music: "Play my workout playlist."
  - Controlling HomeKit-enabled devices: "Turn on the bedroom lights."

Amazon

- **Alexa**: Integrated into Amazon Echo devices and Fire products, Alexa can:
  - Control smart home devices: "Alexa, dim the lights."
  - Access **Zoom meetings**: "Alexa start my Zoom meeting"
  - Play music or audiobooks: "Play [song/artist] on Spotify."
  - Manage shopping lists: "Add milk to my shopping list."
  - **Practice a quiz with your learners**: " Alexa, open my biology test prep"

Instant Translation and Read Aloud

A comparison of instant translation and read-aloud features across different platforms:

Microsoft

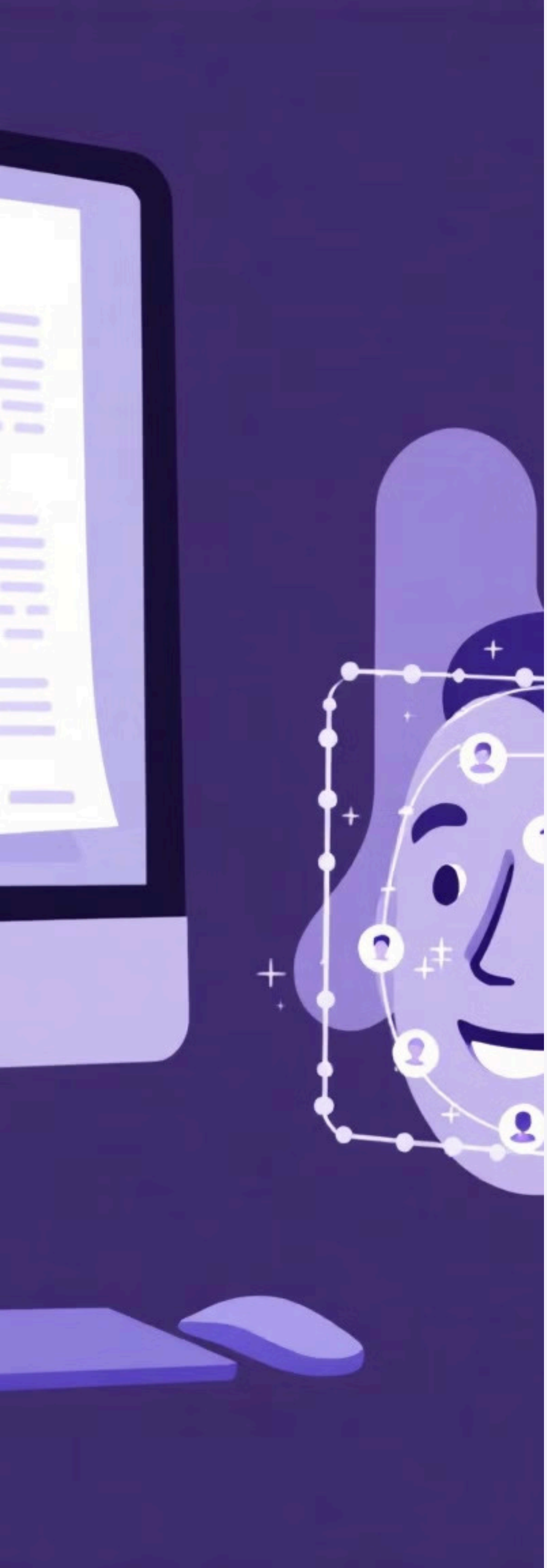
- Microsoft Translator: Instant translation for text, speech, and conversations in multiple languages, integrated with apps like Microsoft Teams.
- Microsoft Edge: Includes a built-in Read Aloud tool for web pages, PDFs, and eBooks with adjustable voice settings.

iOS (Apple Devices)

- Apple Translate App: Instant translation for text and speech between languages, with offline support and read-aloud capabilities.
- The app can read translations aloud, improving understanding of pronunciation and context.

Google

- Google Translate: Instant translation for text, speech, and images (via Google Lens), supporting over 100 languages with real-time conversation translation.
- Google Translate can read translations aloud, assisting with pronunciation and content comprehension.



Optical Character Recognition (OCR) and Facial Recognition

Object Recognition

1. **Microsoft Seeing AI**:
   A free app designed for visually impaired users, it uses a smartphone camera to identify objects, read text, and describe surroundings. For example, it can read labels on products, identify currency, or describe scenes in real-time.
2. **Google Lookout:**
   Available on Android devices, this app identifies objects, text, and even food labels. It provides spoken feedback to help users understand their environment, such as recognizing exit signs or reading menus.
3. **Envision Glasses**:
   These smart glasses combine AI and object recognition to assist users in identifying objects, reading text, and navigating spaces. They can also describe scenes, making them a powerful tool for independence.

Facial Recognition

1. **OrCam MyEye**:
   A wearable device that attaches to glasses, it recognizes faces and announces the names of people in the user's vicinity. This feature is especially helpful for social interactions.
2. **Apple Photos (iOS)**:
   The Photos app on iPhones and iPads uses facial recognition to group and identify people in pictures. While primarily for photo organization, it can assist users in identifying individuals in their photo library.
3. **Facial Recognition in Smart Glasses**:
   Devices like Ray-Ban Meta Smart Glasses integrate facial recognition to help users identify people in real-time, enhancing social interactions for those with visual impairments.

These technologies empower individuals by providing real-time information about their surroundings, fostering independence and confidence. Let me know if you'd like more details about any of these!

Sign Language Recognition

SignAll employs AI and cameras to translate American Sign Language (ASL) into text or speech. This technology facilitates communication between Deaf individuals and non-signers in various real-world settings.

The Hand Talk app functions as a mobile translator, converting spoken languages into sign languages like ASL or Libras (Brazilian Sign Language) in both text and audio formats.

Potential Benefits:

- AI facilitates everyday interactions, especially when human interpreters are not available.
- AI offers immediate communication support during critical situations.
- Advancements in AI enhance accessibility in live settings through automatic captioning and speech-to-text functionalities.

Concerns & Limitations of AI:

- AI may struggle with regional and cultural variations in ASL, contextual interpretation, and nuanced expressions such as sarcasm or idioms.
- Data privacy is a concern regarding the storage, encryption, and protection of AI-handled conversations from misuse.
- Accountability issues arise from potential errors in high-stakes scenarios (e.g., medical or legal), where AI lacks responsibility and formal certification.

Call for Action:

- Human interpreters provide **cultural sensitivity and adaptability** that AI cannot replicate.
- **Certified Deaf Interpreters (CDIs):** Support the training of CDIs to ensure clear and culturally relevant communication.
- **Risk of Devaluation:** Be cautious of relying on AI as a lower-cost alternative, which could negatively impact job opportunities and the quality of interpretation services for the Deaf community.
- **AI as a Complementary Tool:** AI should enhance, not replace, human interpreters, particularly in essential contexts like education, healthcare, and legal proceedings.
- **In-Person vs. Remote Interpreting:** Prioritize in-person interpreting as the preferred standard, using remote interpreting as a supplementary option when necessary.

Predictive Text and Error Correction

Examples of predictive text and error correction features integrated into Windows, Google, and iOS platforms:

Windows

- **Text Suggestions:** Windows 10 and 11 offer built-in predictive text for physical and on-screen keyboards. Enable in Settings > Time & Language > Typing.
- **Spell Check and Auto-Correct:** Integrated into apps like Microsoft Word and Outlook, these tools automatically detect and correct spelling and grammar errors.
- Microsoft Swift Key: Intelligent keyboard app for faster, personalized typing with accurate autocorrect and predictions.

Google

- **Gboard (Google Keyboard):** Available on Android and iOS, Gboard provides predictive text suggestions, auto-correct, multilingual typing, translation and AI composer.
- Google Docs Smart Compose: Predicts entire phrases or sentences as you type in Google Docs and Gmail.

iOS

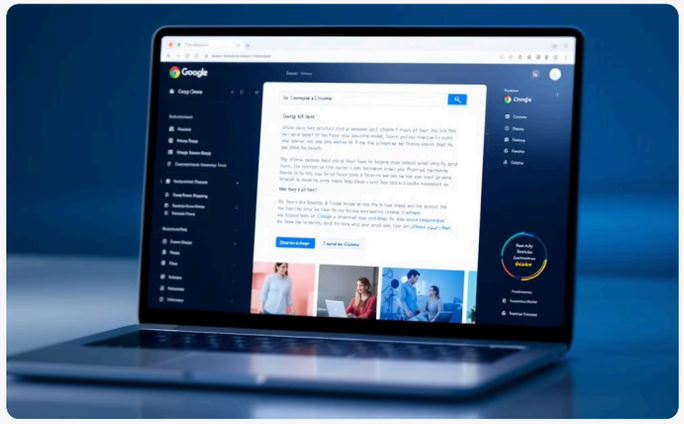
- **QuickType Keyboard:** Native iOS keyboard offers predictive text suggestions, adapting to your writing style and supporting multilingual typing.
- Writing Tools: Proofread work, refine tone and wording, summarize selections, and create content from scratch.

Enhanced Accessibility for Screen Readers

AI-powered tools improve navigation and interpretation for screen reader users by providing visual context and descriptive information.

Microsoft Edge Read Aloud with AI-Generated Image Description

AI fills in alt text gaps while browsing, describing images of people, environments, or objects, enhancing accessibility on webpages and in mobile apps. Learn more.



Google's AI-Powered Alt Text in Chrome

Chrome integrates AI to generate alt text for images, aiding screen reader users, especially on websites not fully compliant with WCAG guidelines, thereby improving web accessibility.

Facebook Automatic Alt Text

Facebook uses AI to generate alt text for uploaded images, describing content like objects, people, and activities, to support visually impaired users on the platform.

AI-powered tools help screen reader users navigate websites that are not fully accessible, but human oversight remains essential to maintain precision and inclusivity.

Wayfinding Tools

AI-Powered Image Descriptions

Be My AI provides detailed descriptions of images, offering context and insights to users who are blind or have low vision.

Interactive Q&A with Google AI Studio

Users can ask follow-up questions to get more specific details about the image, enhancing their understanding.

Haptic Navigation with Sunu Band

Sunu Band uses sonar technology to detect obstacles and provide haptic feedback for navigation, promoting confident and independent mobility.

Skills Development Through AI

Creative Thinking

Inspiring curiosity and innovation

Communication Skills

Enhanced through predictive text and speech-to-text

Tech Literacy

Building foundational understanding of algorithms and data- key skills in the labour market

Problem-Solving and Adaptability

Developing innovative solutions through AI experimentation. Encourages them to adapt quickly across new systems where change is constant

You are Architects of Transformative Change

LBS

Inclusive Design

Making accessibility the norm, not the exception

Continuous Adaptation

Evolving practices with emerging technologies

Ethical Implementation

Ensuring AI serves all learners equitably

Educational Transformation

Creating boundless opportunities for all

Thank you!

Questions? edtech@llsc.on.ca