The Metaverse Wheel: A Digital Trend Visualization

Dhofar University
Foundation Program
1st International ELT Conference
Shaping New Understandings in ELT

Jasmin (Bey) Cowin, Ed.D.
Assistant Professor and TESOL Practicum Coordinator
Touro College, Graduate School of Education
New York, NY
jasmin.cowin@touro.edu

TOURO COLLEGE & UNIVERSITY SYSTEM

Where Knowledge and Values Meet

Dr. Jasmin (Bey) Cowin
Professional Profile

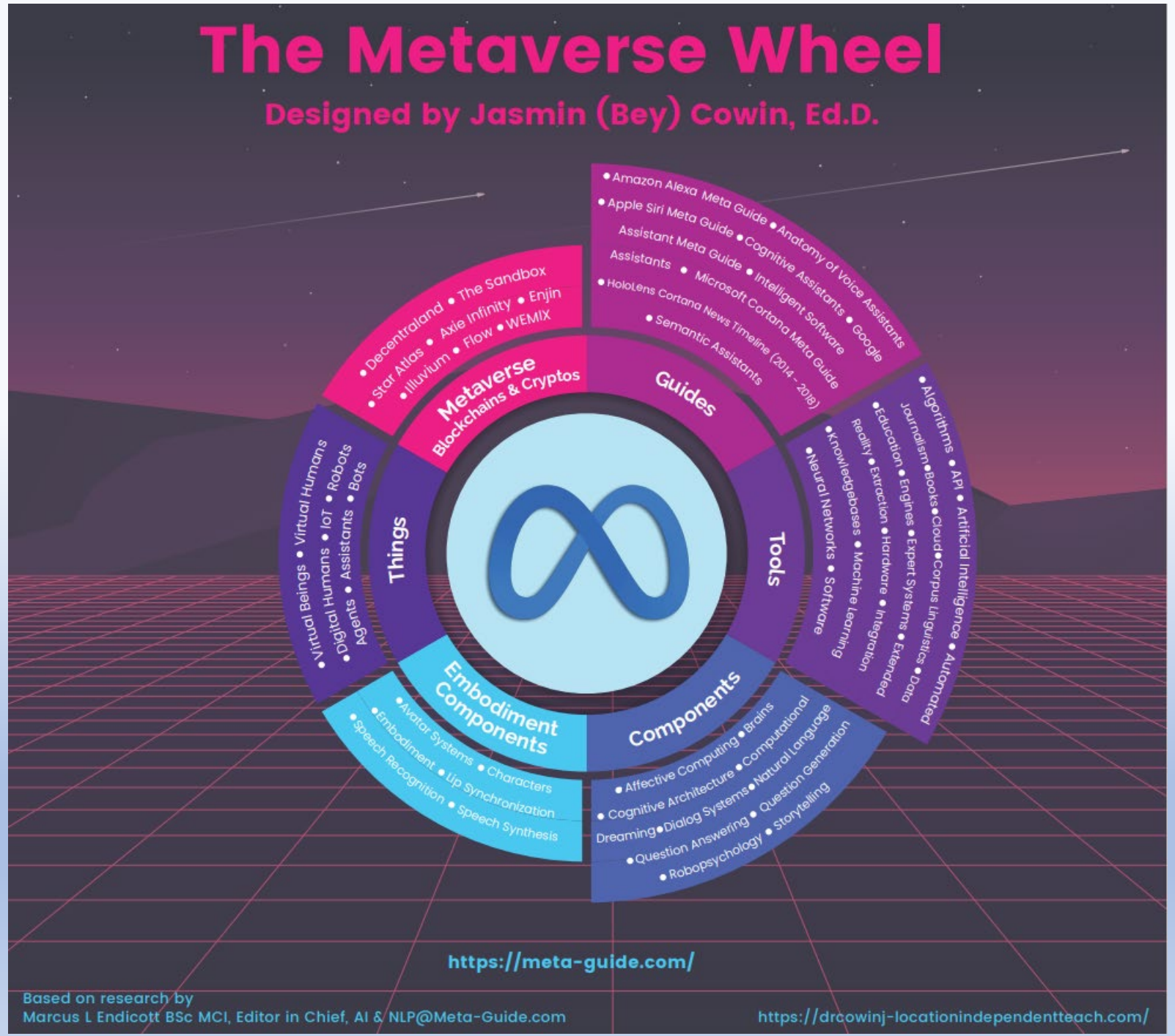
Dr. Jasmin (Bey) Cowin is a Fulbright Scholar; Assistant Professor and TESOL/Bilingual Practicum Coordinator at Touro College, Graduate School of Education; Editorial Board member of the Journal of Systemics, Cybernetics, and Informatics for its special issue "Trans-Disciplinary Communication", past chair of the New York State TESOL 2021 conference; sustainability analyst for Computers for Schools Burundi; TESOL expert and Train the Trainer for the Future Horizons Foundation for Translation, Training, and Development in Sanaa, Yemen; retired Chair of the Rotary Club of New York United Nations International Breakfast Meetings; past President and past Rotary Assistant Governor for New York State.

Dr. Cowin brings over twenty-five years of experience as an educator, technology specialist and institutional leader. As an Education Policy Fellow at the EPFP™ Institute, Columbia University/Teachers College, she became part of a select group of strategic leaders analyzing trends regarding effective educational policy and leadership with a focus on preparing qualified educators for the complexities of 21st - century classrooms. Her extensive background in education, the Fourth Industrial Revolution, augmented and virtual reality simulation training, Green and Black Swan market shifts, not-for-profit leadership and commitment to the idea of education as a basic human right provide her with unique skills and vertical networks locally and globally.

Interested in collaboration for research or an article? Please email to jasmin.cowin@touro.edu

The Metaverse Wheel: A Digital Trend Visualization
This visualization is based on research by Marcus L. Endicott

The metaverse represents a major shift in how language educators might interact with technology and cyberspace in the future. Yet the new terminology, tools, and components associated with the metaverse are a challenge for ELT educators and administrators. This poster visualizes metaverse concepts and terminologies such as blockchains and cryptos, agents, assistants, bots, digital humans, intelligence components, embodiment components, and tools (algorithms, extended reality, extraction, hardware, etc.). The subject matter is presented through an easy-to-navigate wheel visualizing the major components and terminology


The Metaverse Wheel
Designed by Jasmin (Bey) Cowin, Ed.D.
Metaverse
Blockchains & Cryptos
• Decentraland • The Sandbox
• Star Atlas • Axie Infinity • Enjin
• Illuvium • Flow • WEMIX
Guides
• Amazon Alexa Meta Guide • Anatomy of Voice Assistants
• Apple Siri Meta Guide • Cognitive Assistants • Google
Assistant Meta Guide • Intelligent Software
Assistants • Microsoft Cortana Meta Guide
• HoloLens Cortana News Timeline (2014 - 2018)
• Semantic Assistants
Things
• Virtual Beings • Virtual Humans
• Digital Humans • IoT • Robots
Agents • Assistants • Bots
Tools
• Algorithms • API • Artificial Intelligence • Automated
Journalism • Books • Cloud • Corpus Linguistics • Data
• Education • Engines • Expert Systems • Extended
Reality • Extraction • Hardware • Integration
• Knowledgebases • Machine Learning
• Neural Networks • Software
Embodiment Components
• Avatar Systems • Characters
• Embodiment • Lip Synchronization
• Speech Recognition • Speech Synthesis
Components
• Affective Computing • Brains
• Cognitive Architecture • Computational
Dreaming • Dialog Systems • Natural Language
• Question Answering • Question Generation
• Robopsychology • Storytelling
https://meta-guide.com/
Based on research by
Marcus L Endicott BSc MCI, Editor in Chief, AI & NLP@Meta-Guide.com
https://drcowinj-locationindependentteach.com/

DEFINING THE METAVERSE

Forbes Magazine offered varied definitions of the metaverse from tech leaders. Each speaks of a space that is a combination of virtual and live—creating a “third space,” as sociologist Ray Oldenburg noted, that is not home or work.

What is the metaverse?

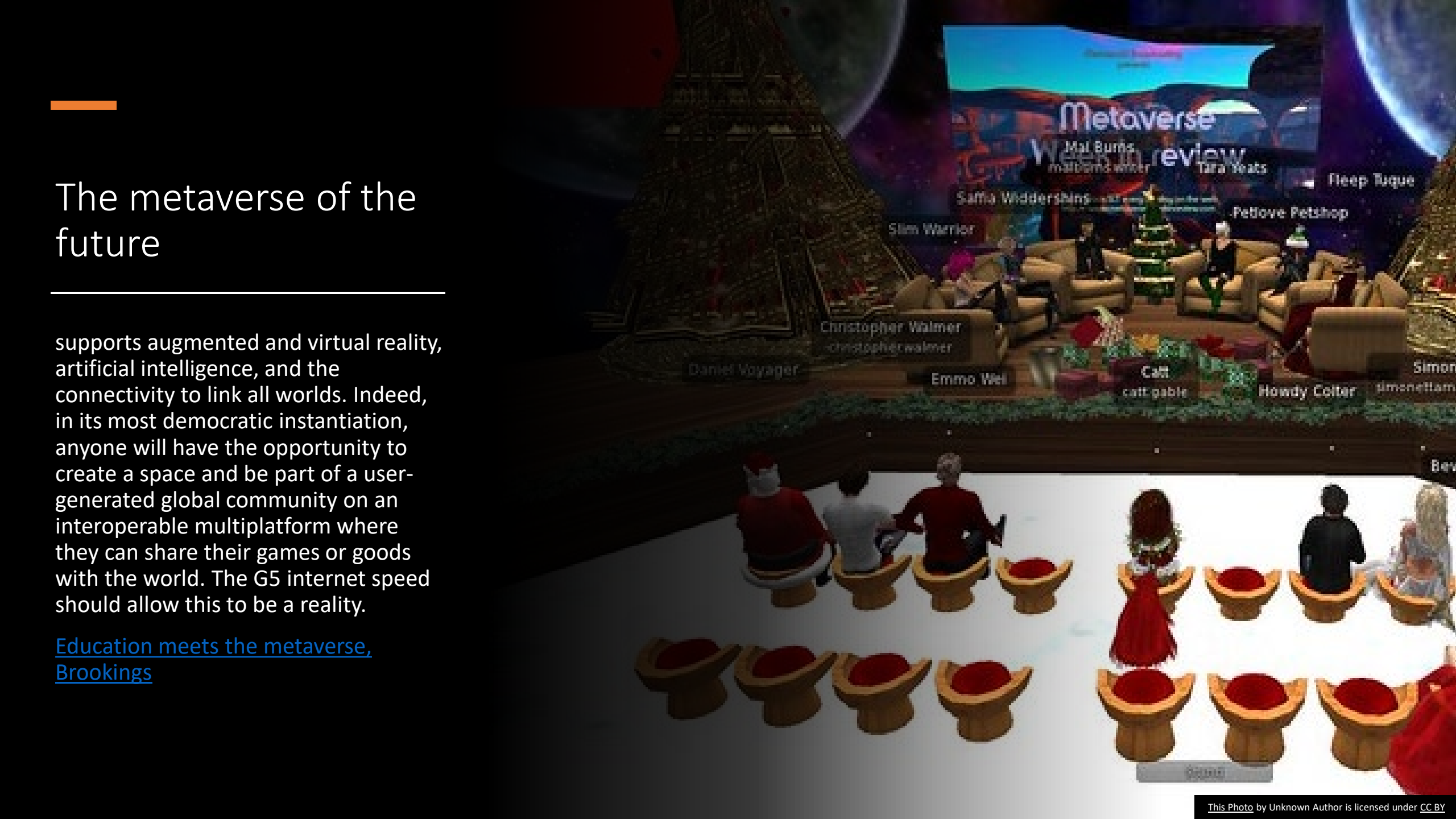
Meta in Greek means ‘beyond’ or ‘transcending’.

The metaverse is a digital environment that will be created much like online worlds in video games are today. However, it will exist as an immersive social environment, where people can meet up, interact and experience life digitally – without being constrained by physical space.

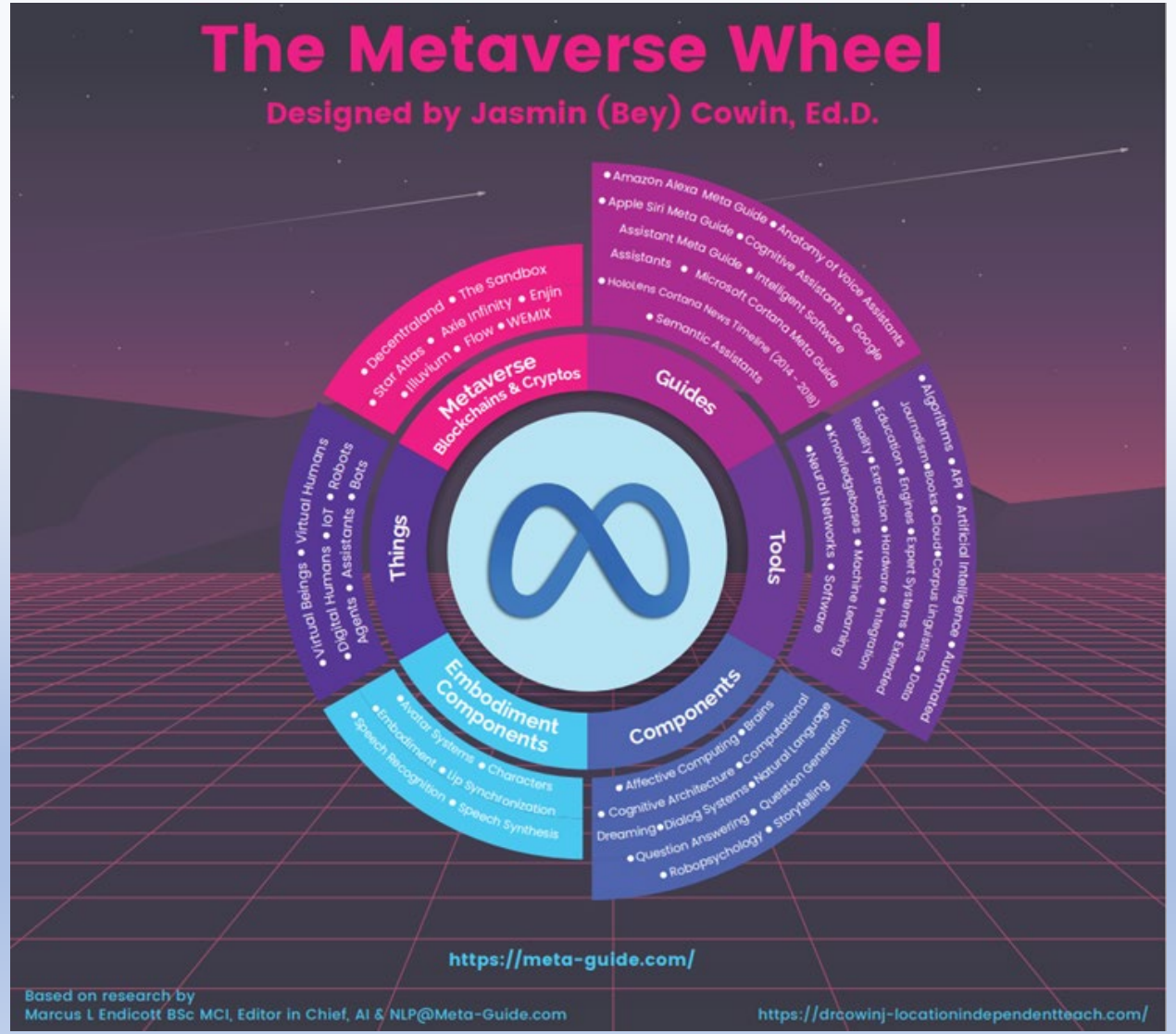
The metaverse of the future

supports augmented and virtual reality, artificial intelligence, and the connectivity to link all worlds. Indeed, in its most democratic instantiation, anyone will have the opportunity to create a space and be part of a user-generated global community on an interoperable multiplatform where they can share their games or goods with the world. The G5 internet speed should allow this to be a reality.

[Education meets the metaverse, Brookings]



Guides

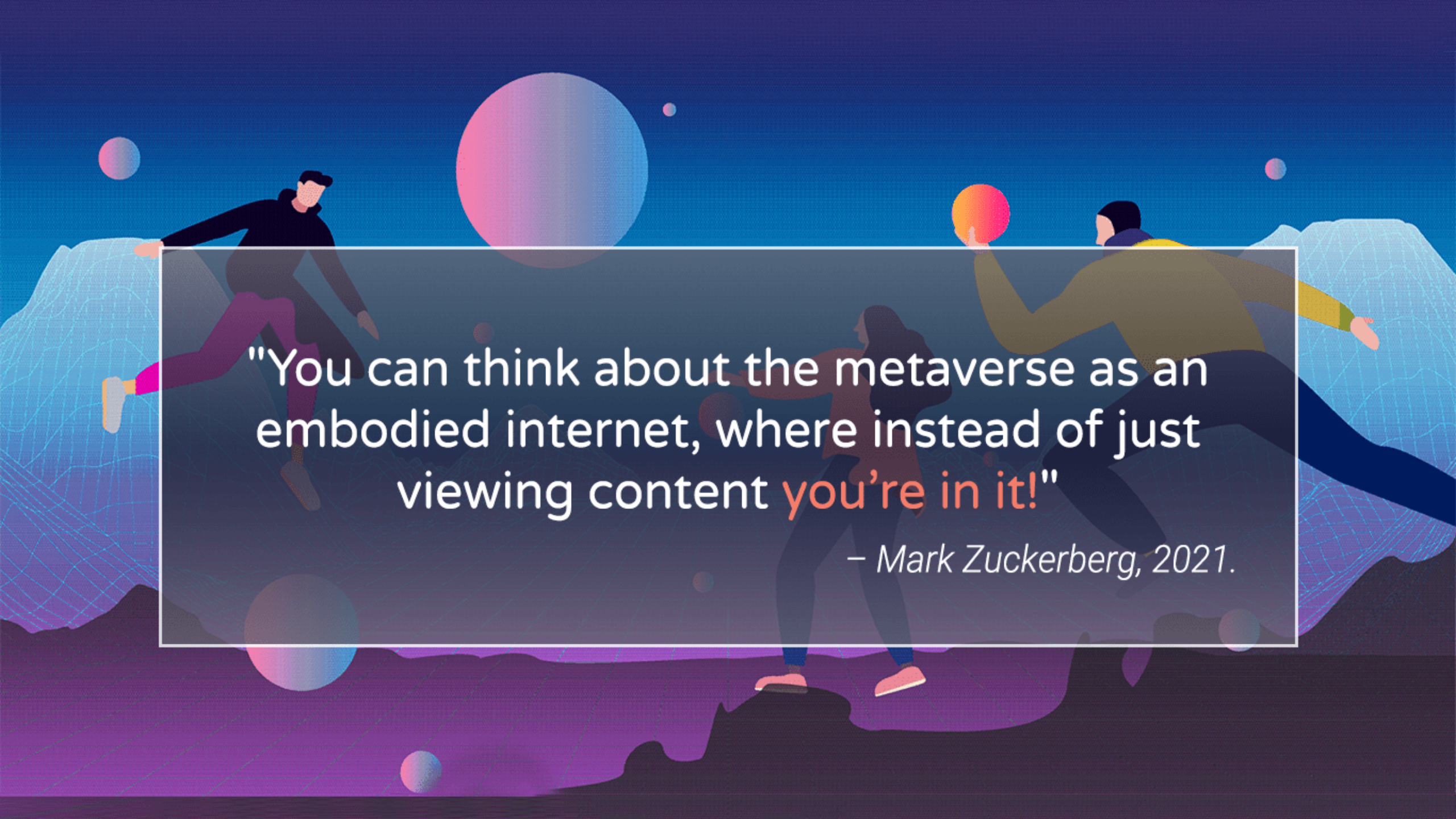


Google Assistant

Google Assistant is a conversational, voice-activated digital assistant created by Google that can perform actions on behalf of a user and provide contextual information.

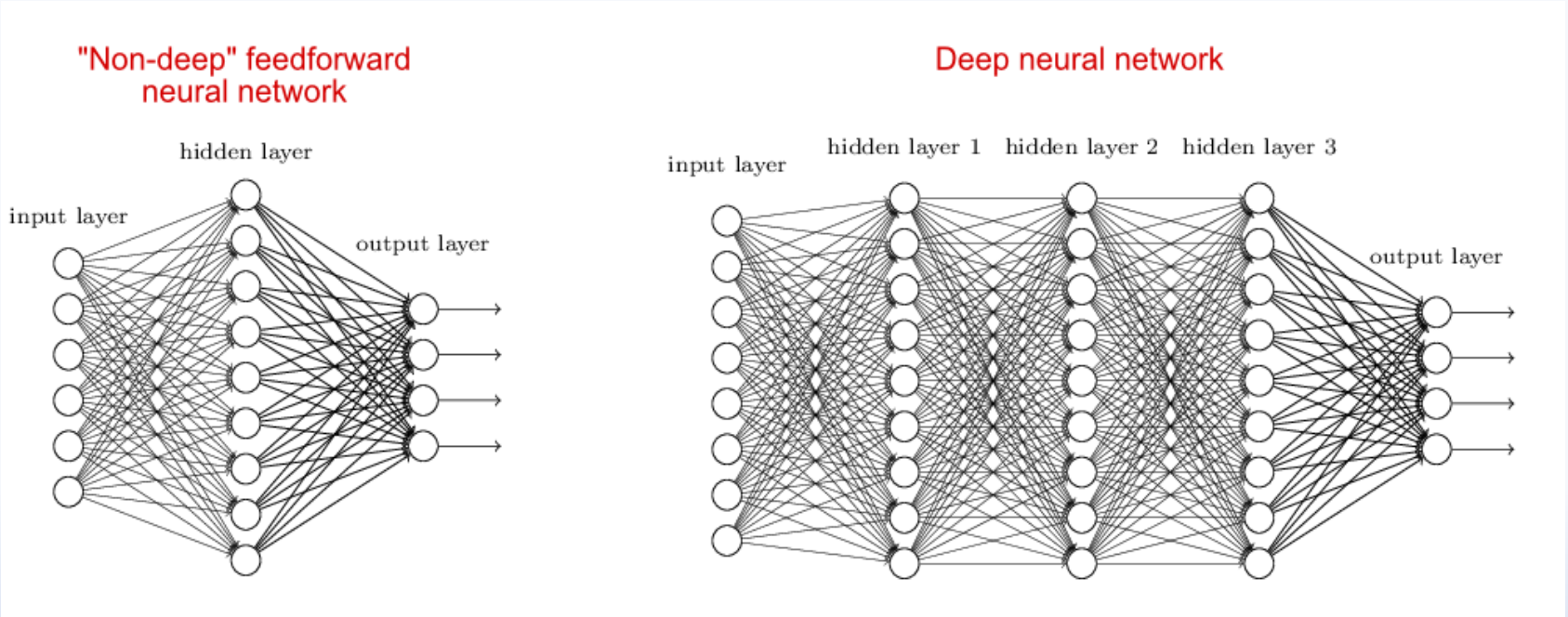
Why does Google Assistant matter?

Google Assistant is important because it is the linchpin in Google's AI-first strategy for the future, and will likely come to define how users interact with almost all of Google's core products.


"You can think about the metaverse as an embodied internet, where instead of just viewing content you're in it!"
– Mark Zuckerberg, 2021.

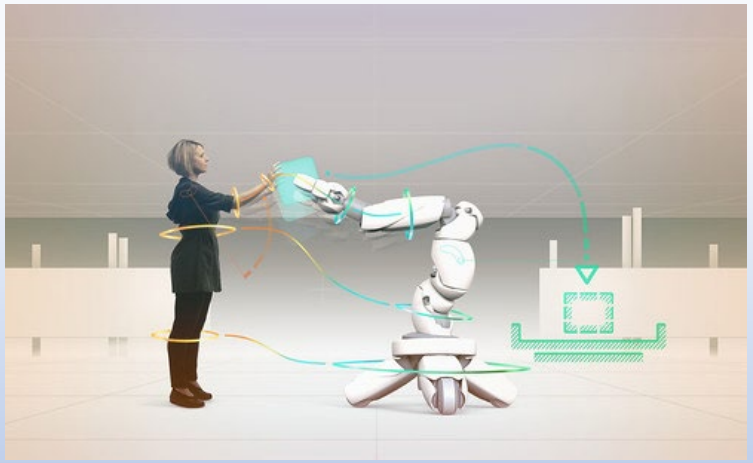
EXAMPLE OF TOOLS

Algorithms
API
Artificial Intelligence
Automated Journalism
Books
Cloud
Corpus Linguistics
Data
Education



COMPONENTS
Intelligence Components

Computational dreaming (CD) is inspired by the structure and dreaming process of the human brain.
It examines previously observed input data during a “dream phase” and is able to develop and select a simplified model to use during the day phase of computation.



- Affective Computing
- Brains
- Cognitive Architecture
- Computational Dreaming
- Dialog Systems
- Natural Language
- Question Answering
- Question Generation
- Robopsychology
- Storytelling

Embodiment Components

Avatar Systems

Characters

Embodiment

Lip Synchronization

Speech Recognition

Speech Synthesis

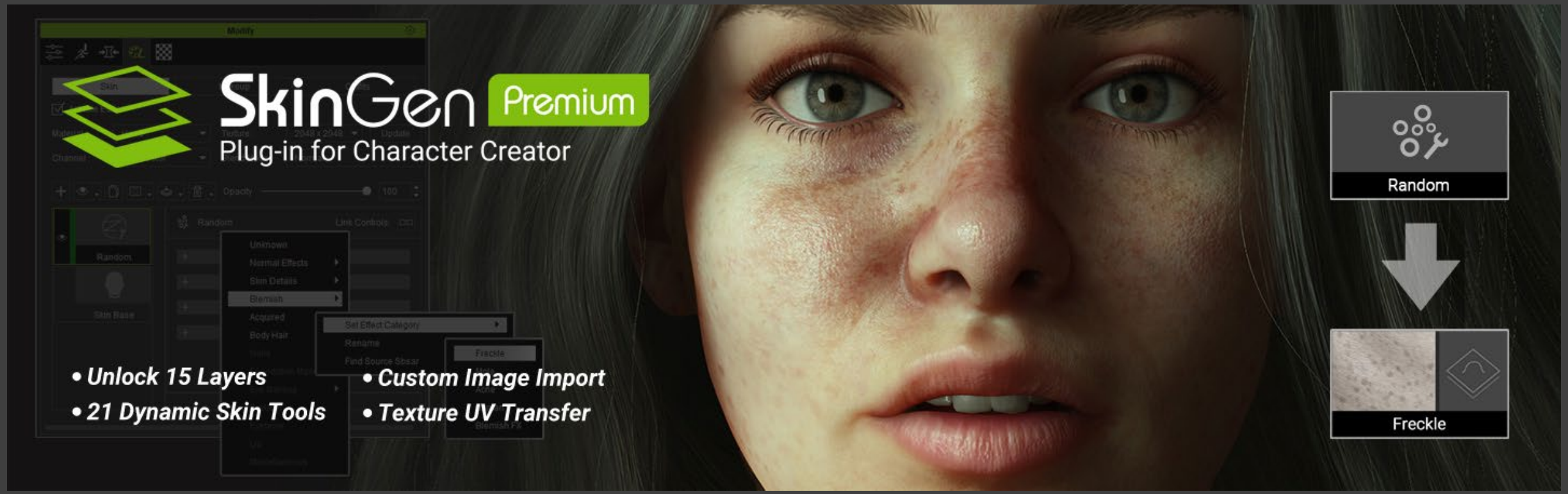
Speech synthesis

the artificial production of human speech. A computer system used for this purpose is called a speech computer or speech synthesizer, and can be implemented in software or hardware products. A text-to-speech (TTS) system converts normal language text into speech

```
event.preventDefault();

var utterThis = new SpeechSynthesisUtterance(inputTxt.value);

var selectedOption = voiceSelect.selectedOptions[0].getAttribute('data-name');

for(i = 0; i < voices.length ; i++) {

  if(voices[i].name === selectedOption) {...
```

THINGS

Agents
Assistants
Bots
Digital Humans
IoT
Robots
Virtual Beings
Virtual Humans



Much like you have NPCs (non-playable characters) in video games, digital humans will be the personas you interact with throughout the metaverse.

Metaverse Blockchains & Cryptos

[Decentraland]

[The Sandbox]

[Star Atlas]

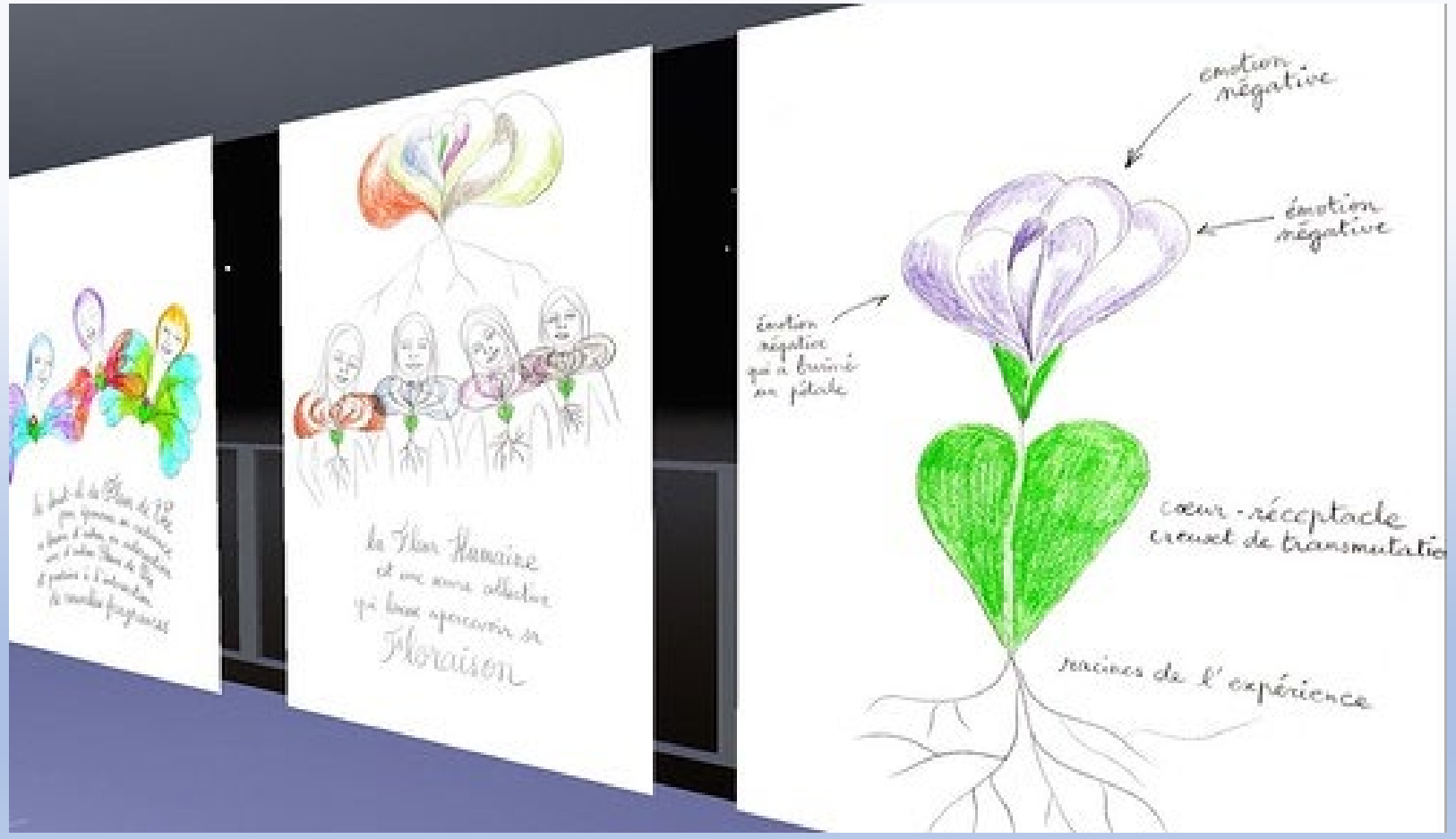
[Axie Infinity]

[Enjin]

[Illuvium]

[Flow]

[WEMIX]

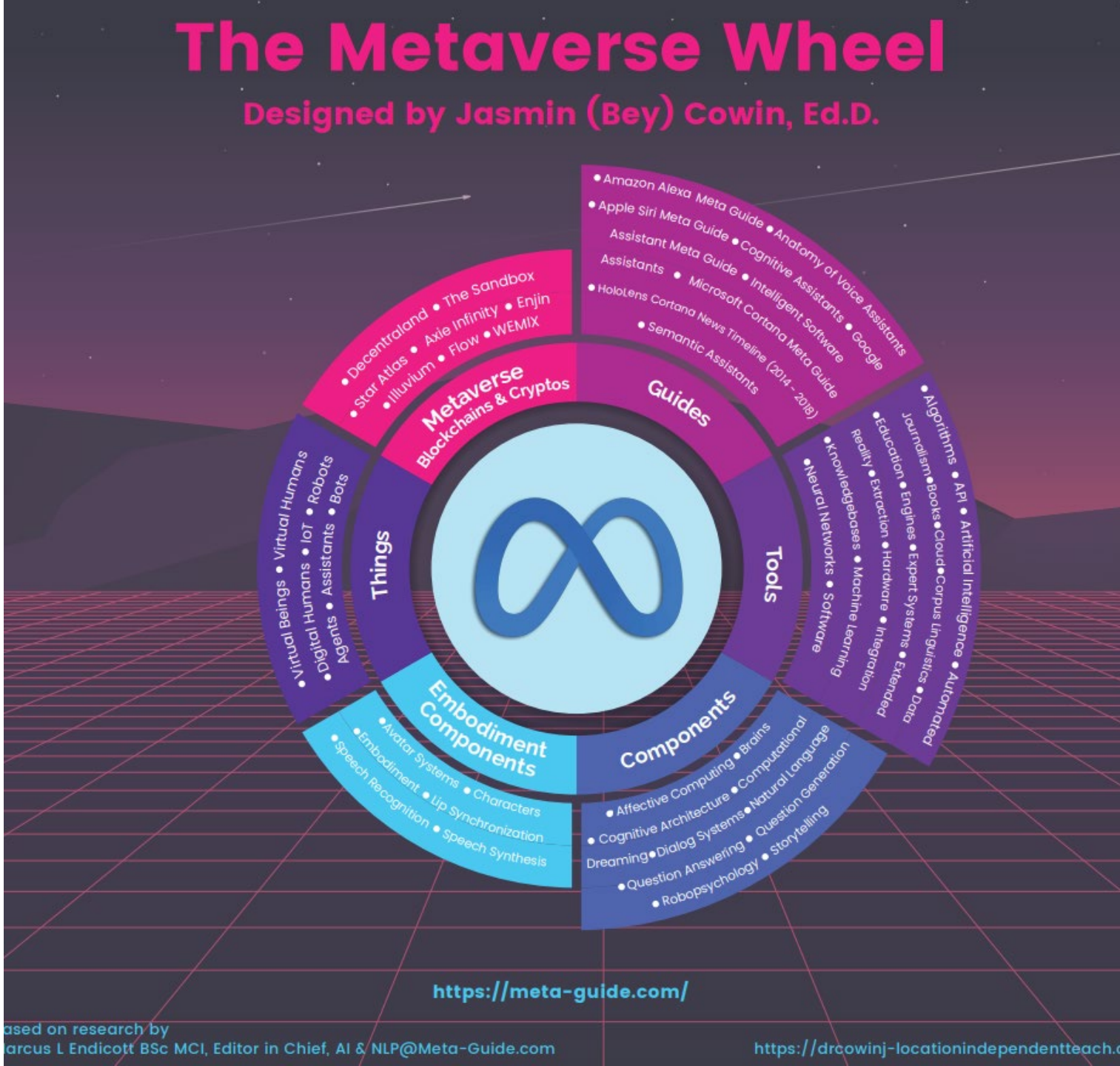


The metaverse is a $1 trillion opportunity, crypto giant Grayscale says as virtual land sales boom

Virtual land inside metaverse projects have sold for upwards of $2 million.

Content personalization

Content personalization offers opportunities to accelerate learner understanding, deepen engagement, and do the impossible. ARDTs enable inquiry, inclusion, collaboration between educator and learner and PLNs.



TPACK framework

Successful Augmented Reality Digital Technology (ARDT) design and implementation will require knowledge beyond Subject Matter Knowledge, Pedagogical Knowledge, Pedagogical Content Knowledge.

Koehler, M. et al, (2013). What is technological pedagogical content (TPACK)? Journal of Education, 3, 13-19

Figure 1 designed by Jasmin (Bey) Cowin

Pedagogical content knowledge (PCK)	Pedagogical practices and specific learning objectives	Implementing the best practices for teaching specific content to specific learner target groups.
Technological pedagogical knowledge (TPK))	Relationships and interactions between technological tools and specific pedagogical practices	Understanding how to use digital tools as a vehicle to achieve learning outcomes and experiences.
Technological content knowledge (TCK)	Relationships and convergence among technologies and learning objectives	• Knowing how digital tools can enhance or transform the content. Understanding digital tools are delivered Discern between the types of interactive experiences.

Program Coherence

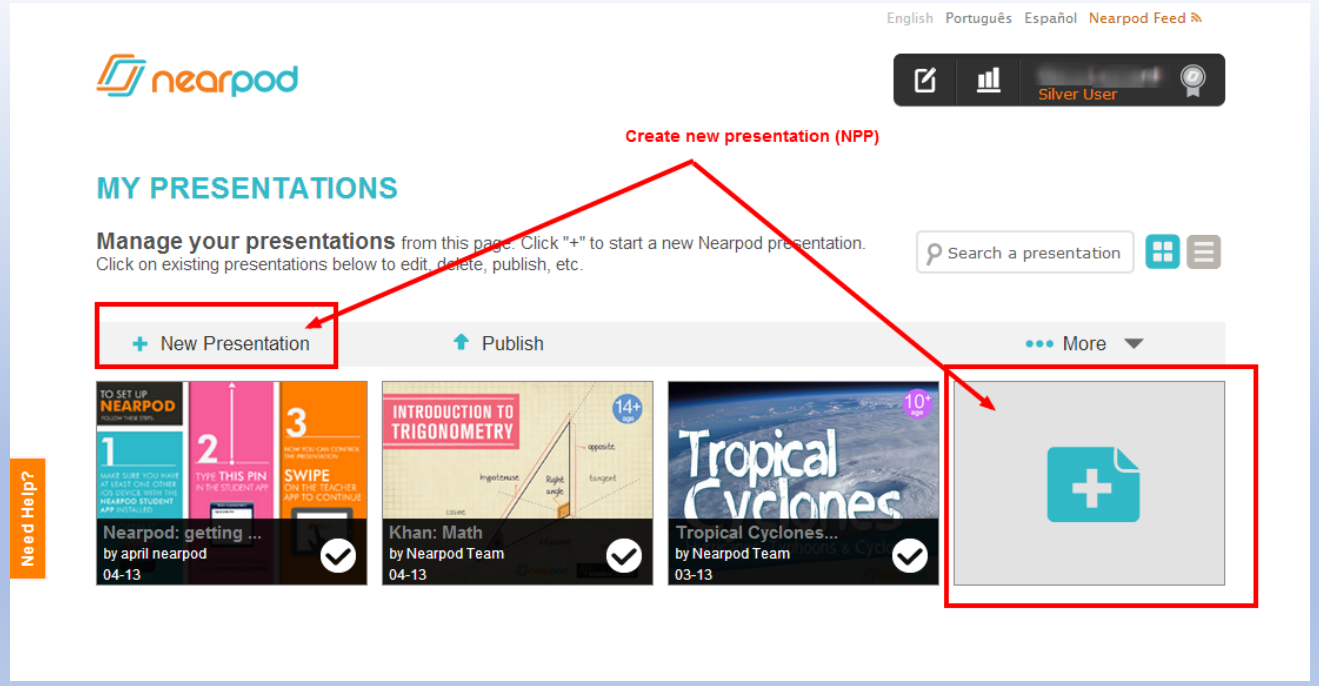
Institutions will need program coherence coupled with sustained learner contact at both the institutional and educator/designer level intertwined with continuous assessment and evaluation of technology tools, third party vendors, faculty and learners.

Enabling and Empowering

- **ARDTs enable multiple users to experience the same curated content and foster 21st-skills such as being a creative communicator and global collaborator.**
- **ARDTs enable educators and learners to engage with complex content and tasks in safe, realistic ways.**
- **Empowered learners, digital citizens, and knowledge construction are tangible benefits of immersive environments.**

Free ARDT tools for Educators

Free ARDT tools for Educators include 3Bear Lessons, Merge EDU, Immersive Reader, Flipgrid, NearPod VR, CoSpaces, Big Bang AR, Adobe Aero, Thyng AR, Quivervision, Jig Space, Mondly AR, and the Metaverse.



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