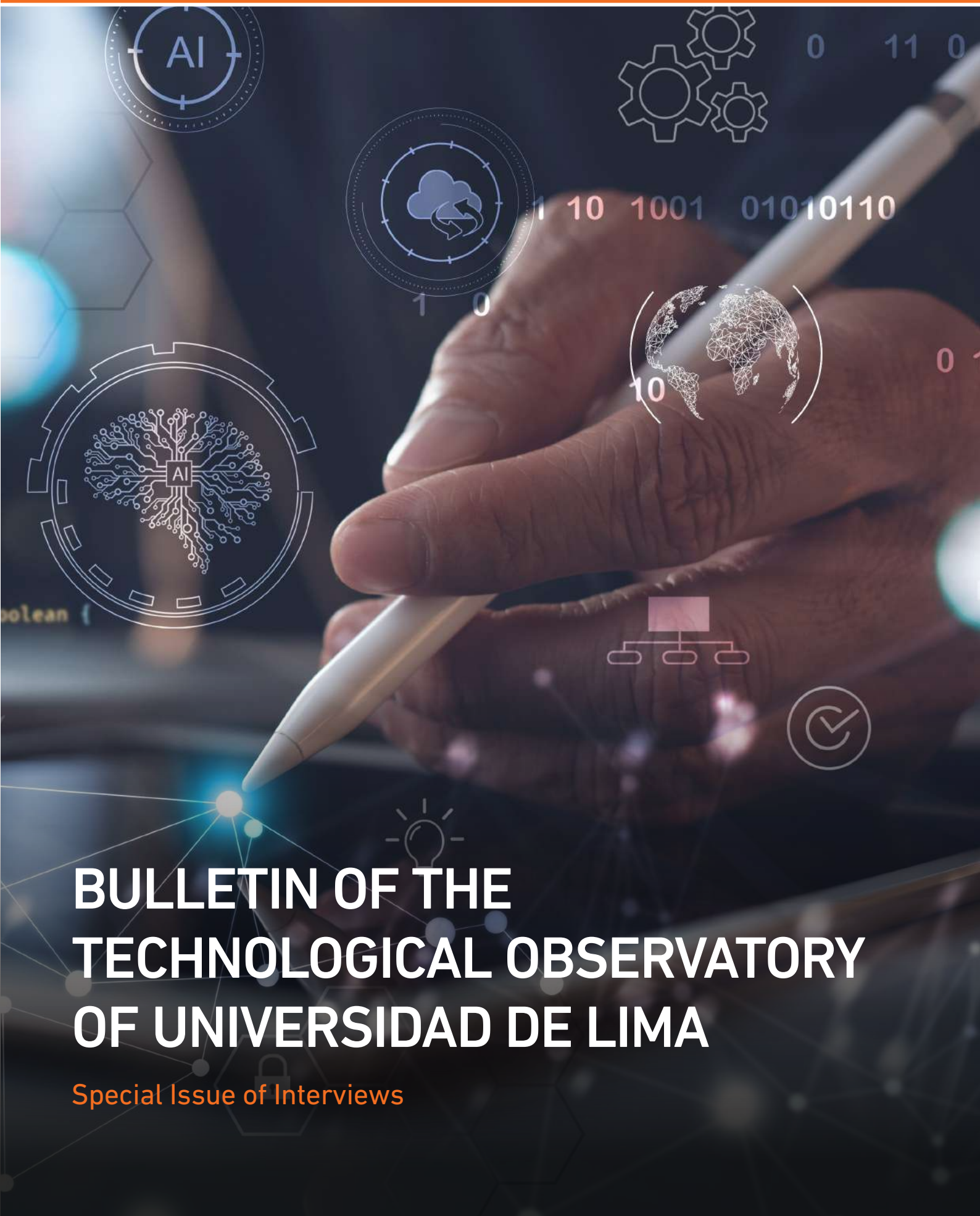
UNIVERSIDAD DE LIMA



BULLETIN OF THE TECHNOLOGICAL OBSERVATORY OF UNIVERSIDAD DE LIMA

Special Issue of Interviews

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CONTENT

In recent years, digital technology has transitioned from being just a novelty to become a key element for many areas. It has transformed many aspects of our daily life—from how we work to how we communicate. In this context, the field of education is not an exception. Digital technology has profoundly changed the way of teaching and learning. This educational revolution is permanent, that means we can witness it on a daily basis.

Thanks to the adaptive systems, data analysis tools, and artificial intelligence (AI) is possible to customize learning methods, contents, and pace to the needs of each student. This not only improves the educational process, but also allows professors to identify areas of difficulty more precisely in order to provide a more specific support. Furthermore, technology promotes new ways of interaction and collaboration between students and professors, improving the overall educational experience.

This bulletin—comprising interviews to renowned professors of Universidad de Lima—further explores how digital technology is embraced and adapted to the academic environment. These experts share their vision of how these tools are incorporated in their teaching methods. It also addresses both challenges and opportunities posed by these new technologies for the educational community.

PSYCHOLOGY

Magaly Flores Giles

Professor from the Faculty of Psychology. She holds a professional title in Psychology, majoring in neuropsychology. Master in Research Psychology. Flores currently teaches three courses at Universidad de Lima: Human Psychology I and II, and Introduction to Neuroscience.

THE RISE OF AI IN PSYCHOLOGY AND NEUROPSYCHOLOGY

In psychology and neuropsychology, there has been an increased use of emerging technologies such as artificial intelligence (AI) and natural language processing (NLP), with different tools: ChatGPT, Perplexity AI and PDF reading software. These technologies are applied in psychological assistance and research, which improves personalized treatments and diagnoses—although it faces ethical and privacy challenges. On the other hand, it is key to understand AI principles, keep updated, and build skills for data management. It is expected that these technologies improve both efficiency and customization of treatments, while placing special emphasis on ethics and responsibility when used. Finally, Professor Flores recommends professionals to look for interdisciplinary collaborations and keep a continuous learning in order to adapt to the new trends.

TECHNOLOGIES FOR THE FIELD AND DESCRIPTION

Professor Flores said that the use of ChatGPT in the field is quite remarkable. By feeding the model with clinical data, it offers diagnosis suggestions for patients and personalized treatment strategies. This allows you to identify patterns that could be easily ignored, thus improving diagnosis accuracy and treatment adaptation to the person's needs. In neuropsychology, this tool is paramount to obtain recommendations of treatment based on the unique characteristics of each patient. It is also worth mentioning the importance of specialized knowledge in order to harness this kind of technologies in the field of psychology.

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FEATURED TOOL

ChatGPT is a generative artificial intelligence chatbot developed by OpenAI (Brown, 2020). It uses natural language processing to create humanlike conversational dialogue about different topics. In the field of psychology, it has improved the interaction between professionals and patients. In fact, it has facilitated tools to address diagnoses and treatments (El Cronista, 2023). Furthermore, the relationship between ChatGPT and psychology is such that this technology exists thanks to the conceptual inputs from recognizing the human brain as a sophisticated computer (Correa, 2023).

FEATURED TOPIC

Artificial Intelligence (AI) has a great potential to transform psychology and neuropsychology because it would increase efficiency in repetitive tasks such as grading psychological tests. This will allow professionals to spend more time in activities that require human skills such as clinical assessment and interaction with patients. Furthermore, the AI provides a more customized care, increasing both accuracy and efficiency of treatments based on individual needs. In the field of research, AI tools significantly helps to manage large datasets. It is also quite important to consider the ethical challenges in terms of privacy, since it is pivotal to ensure the ethical use of AI. The principles of beneficence, justice, autonomy, and privacy should always be respected.

Fernando Joel Rosario Quiroz

Psychologist by training. He works in the Faculty of Psychology at Universidad de Lima, teaching Research and Seminar courses. Rosario is also an educational psychologist.

AR AND AI IN PSYCHOLOGY

During 2023 and 2024, the field of psychology has experienced a significant impact due to the introduction of emerging technologies such as augmented reality (AR) and AI. While AR is used in therapies to improve the connection with patients, AI is used in psychological research to analyze data and draw conclusions. Developing new skills such as cognitive flexibility and adaptability to new technological platforms is paramount to make the most of these tools. It is expected to have a greater integration of these technologies in the clinical practice and research, which could change the diagnosis methods and therapies. However, they face ethical and privacy challenges that must be addressed promptly. Finally, the new professionals in the field need to familiarize with these new technologies and receive further training to embrace these new trends since it will be decisive for their professional success in the future.

TECHNOLOGIES FOR THE FIELD AND DESCRIPTION

The Empty Chair Technique—commonly used in humanistic education—is presented as a practical application in the context of AR. This technique, which implies an imaginary conversation, can be adapted and used in AR settings for different purposes.

Another example is the diagnosis process in mental health, where borderline cases often arise. In such situations, using digital tools—such as AI—may be beneficial. For example, through the interaction with an online platform that includes the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), mental health experts can get recommendations based on specific signs and symptoms. In a nutshell, incorporating digital technologies in the professional practices, such as AR and AI, brings significant opportunities that deserve being explored and used without fear.

FEATURED TOOL

Augmented reality is an enhanced, interactive version of a real-world environment achieved through digital visual elements, sounds, and other sensory stimuli via holographic technology (Microsoft, 2024). In this way, users can communicate and be present in this new reality.

According to Professor Rosario, this tool provides the chance to conduct therapies in the field of psychology. This results from the fact that it offers a highly customizable immersive environment that allows therapists to adapt interventions to the individual needs of patients.

> Thanks to the creation of virtual scenarios and the incorporation of specific sensory stimuli, this new technology can recreate challenging situations for patients, giving them the chance to practice their coping skills and develop adaptation strategies in a controlled safe environment (Torres, 2022, p. 40).

FEATURED TOPIC

The COVID-19 pandemic has transformed many fields of psychology. For instance, therapy sessions that used to be strictly in person now can be adapted to online tests and counselling. These changes have involved a reconfiguration of diagnoses and treatments. However, this evolution also implies negative aspects in terms of digital inclusion. The lack of access to technology creates barriers in certain population groups, which is a challenge that we must consider, especially in less developed places such as Peru.

Jorge Linares Weilg

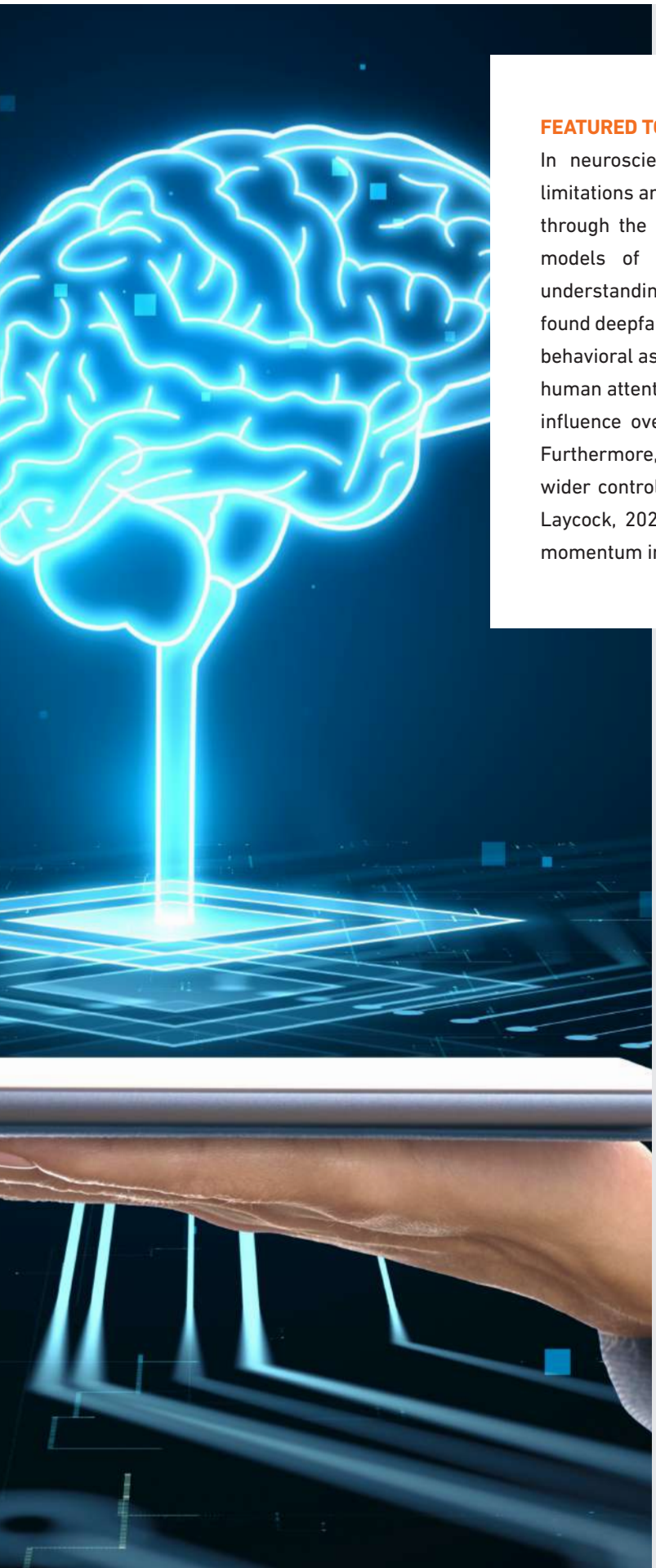
Renowned communicator, marketer and publicist. He has pursued a Master in Neuroscience and now is a doctoral student in psychology. Linares is professor at Universidad de Lima where he teaches Applied Neuroscience and Research.

AI IN NEUROSCIENCE

Professor Linares talked about different technological advances in the field of psychology. Among them, he underscored the relevance of AI and its integration with other neuroscience tools, as well as its application for the analysis of large data volumes and pattern identification in brain activity. Linares also highlighted the importance of maintaining a human-centered approach and respecting ethics when using this kind of tools. The development of disruptive technologies, such as brain chips, also poses new challenges to us all. For example, privacy issues and neurorights which, according to Arellano (2024), are principles that protect people, since they recognize the authority over cognitive activities. Finally, Professor Linares said that both objectivity and ethical commitment are key to seize all the possibilities unlocked by these emerging technologies.

TECHNOLOGIES FOR THE FIELD AND DESCRIPTION

The 1990s were designated the Decade of the Brain (DOB), which was powered by technological progress such as fMRI and EEG, together with the development of eye-tracking technology. These instruments have evolved over time, which has enabled its integration with other technologies in order to maximize its use. For example, the application of Generative AI in this field improves data collection and analysis. Furthermore, a case study of eye-tracking was presented. This provides numerical data based on visual attention, which can be processed by AI systems to deliver key insights with high efficiency. These findings may include attention patterns in websites, emotional responses to specific contents, and consumer preferences in different contexts.



FEATURED TOOL

In neuroscience, AI integration has been crucial to overcome previous limitations and move forward in understanding the human brain. For example, through the analysis of large datasets, AI can develop accurate predictive models of mental states such as fatigue, which provides a better understanding of its nature (Lambert et al., 2024). Moreover, neuroscience has found deepfakes useful. These are multimedia tools that replicate physical and behavioral aspects of real people, in order to investigate social perception and human attention. By controlling elements such as visual contact and gestures, influence over observers' perception can be evaluated (Vijay et al., 2021). Furthermore, platforms such as Midjourney and Dall-E provides researchers a wider control on study variables by generating specific images (Becker and Laycock, 2023). These are just some examples of AI potential to keep the momentum in neuroscience progress.

FEATURED TOPIC

In 1998, the first Brain-Computer Interface (BCI), developed by the Emory University in United States, was implanted in a patient with locked-in syndrome, which allowed him to communicate with a computer by moving the pointer with—what some people may call—thoughts (McGee and Maguire, 2010). In 2022, Synchron implanted brain chips in five patients who used this to send emails and text messages (Parra, 2024). Despite this breakthrough, technology is constantly evolving. Thus, Neuralink and other companies keep working to provide more advanced, safer, and specialized products.

In January 2024, Neuralink implanted its first brain chip in a human, who was able to move a computer mouse. Moreover, Elon Musk, owner of the company, said that the ultimate goal of the project is to regain lost functions such as vision or limb movement, as well as to improve others such as intelligence or memory (Hart, 2024).

COMMUNICATION

Ricardo Marapi Salas

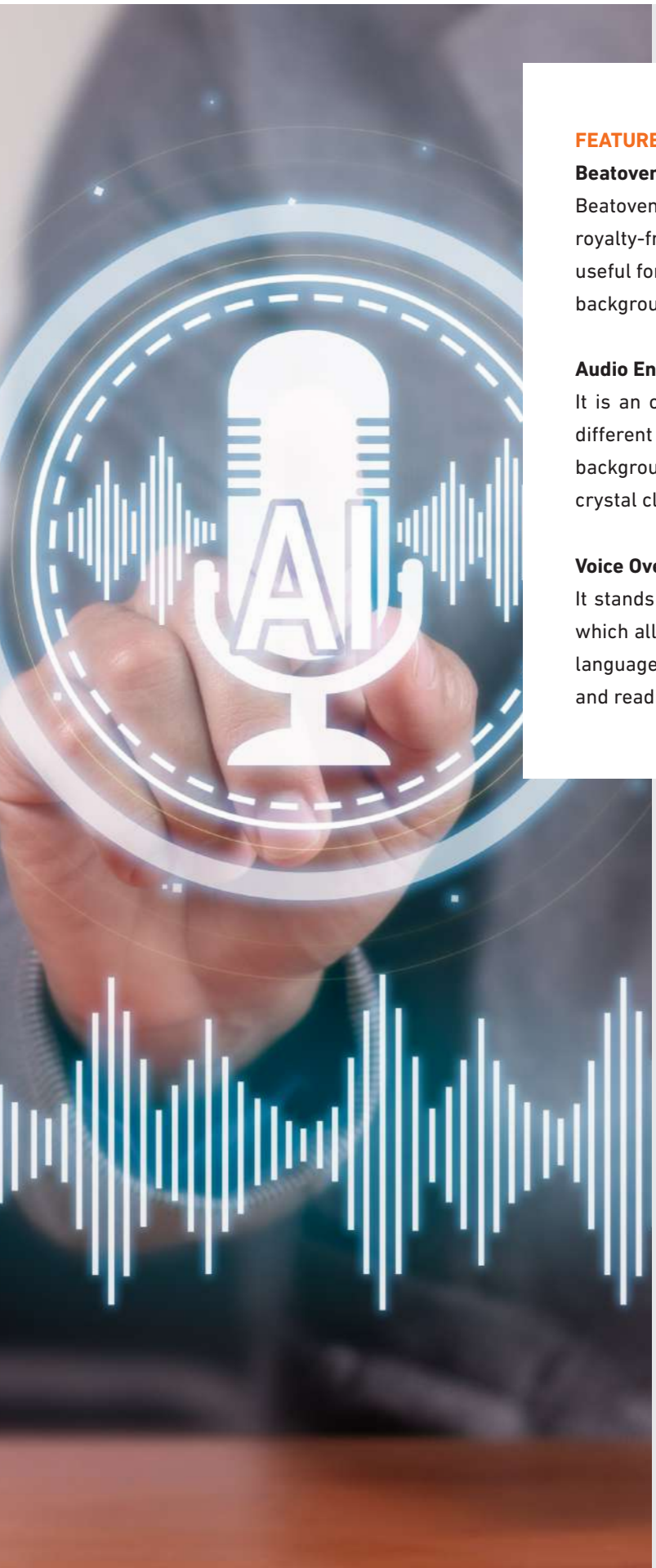
Journalist with proven track record in audiovisual productions. Professor at Universidad de Lima, where he teaches the course-workshop Podcasting and Radio, aiming to develop experiences and projects for podcast production.

IMPLEMENTATION OF TECHNOLOGICAL TOOLS IN SOUND EDITING

During 2023 and 2024, AI has largely influenced Professor Marapi's professional scope. Particularly when it comes to ChatGPT, which is used in podcasting and radio in order to suggest podcast names and analyze different audiences. Another important aspect is the use of Generative AI applications to clone voices and produce original music, which has transformed the podcasting industry. These technologies are incorporated in audio content production as a complement, respecting human creativity. Curiosity and adaptability are key to harness this innovation, together with an ethical approach for its correct implementation. It is paramount to recognize the potential of these tools to boost human efforts. However, they shouldn't replace neither the emotional connection nor creativity when producing audio contents.

TECHNOLOGIES FOR THE FIELD AND DESCRIPTION

In the field of music powered by AI, we can highlight tools such as Beatoven.ai, which allows you to create melodies in different musical genres and speeds. Another key tool is Audio Enhancer, within Adobe Podcast suite, which improves sound quality of recordings in non-professional settings. In the field of voice cloning, we can talk about VoiceOver Speech Five, which creates personalized voices using texts, with options of speed and tone. These tools have made podcasts and musical production easier, especially for people working at home or in amateur environments.



FEATURED TOOLS

Beatoven.ai

Beatoven.ai is a web tool that uses advanced AI to generate unique royalty-free music tracks tailored to your needs. It is particularly useful for content creators because it offers a simple way of obtaining background music (Sturm et al., 2024).

Audio Enhancer

It is an online tool designed to improve the quality of audio files in different formats. It helps users to clean up audio and remove background noise, improve sound quality in video calls, and preserve crystal clarity in conversations (Bosi et al., 2021).

Voice Over Speechify

It stands out for the advanced function of transforming text to voice, which allows users to listen texts in over 100 AI voices in 50 different languages. This tool features options to adjust voice, accent, language, and reading speed (Sacramento, 2023).

FEATURED TOPIC

In sound editing, podcast production and radio, the emotional connection between the speaker and the listener is critical. This aspect hasn't been replicated yet by the artificial intelligence or robots, since these technologies can't show feelings in its narratives despite adjustments and customization options. Although AI can help with some aspects such as music, texts, and voice-over, the real key to succeed in the podcast and radio world is the capacity to transmit emotions and experiences originally, according to Professor Marapi.

Melissa Huamán Huillca

Renowned communicator, professor at Universidad de Lima, and researcher. She focuses on the production, conduction, and scripting of audiovisual formats, as well as in the research of immersive experiences. Since 2019, Huamán is trailblazer in the field of immersive narrative integrated with virtual reality in Peru. She currently works in her VR project called *Nuestro hogar*.

VIRTUAL REALITY IN EDUCATION AND IMMERSIVE NARRATIVE

Professor Huamán highlights Generative AI and VR as technologies with high impact in education and audiovisual production, respectively. Particularly, within the GenAI scope, she said that image generators are a great support for her classes because it inspires students during their project creative process. Moreover, Huamán underscored the importance of learning to investigate and understand technologies for its efficient use, as well as building skills to properly communicate with AI to have more accurate results. Finally, she made a call to apply these technologies ethically. For example, for the production of immersive experiences with VR, it is critical to consider the potential psychological impact in the audience.

TECHNOLOGIES FOR THE FIELD AND DESCRIPTION

Professor Huamán says that she uses GenAI tools to support her teaching process and academic activities. Specifically, Huamán uses ChatGPT to provide ideas that encourage creativity in students. For instance, she uses this in the storytelling course. Moreover, she recognizes different tools such as Dall-E, Adobe Firefly and Canva for its capacity to create images. This increases the options to present projects by students.

Professor Huamán also explains that in an audiovisual environment, VR has arisen as a disruptive tool to explore immersive storytelling.

FEATURED TOOL

VR has consolidated as a technology that gives users an immersive experience in which interactions are promoted within a “mix of realities” (Li et al., 2023). Over the years, areas such as art and entertainment have adopted this tech as an avenue to expand creative expression.

Immersive storytelling is a technique that uses VR to capture the audience’s attention by creating an all-encompassing experience. By placing the audience in the center, immersive storytelling allows them to be active participants, instead of having a passive role as viewers (Balcerak and Balcerak, 2024). In 2017, Google News Lab presented two concepts that differentiate story communication models: storytelling and storyliving. The latter encompasses immersive storytelling, according to Merino (2023). This author explains that transition towards a storyliving challenges authors and developers to balance the freedom of users to explore the world and maintain coherent storytelling.

FEATURED TOPIC

Over the past few years, the field of psychology has benefited from using VR, since it is a tool that provides an immersive experience. Recent studies reveal that this technology improves significantly attention, dream quality, emotional regulation, and mood. Furthermore, it contributes towards reducing stress and depression (Ma et al., 2023). It has even been used to treat patients with cancer to reduce fatigue, anxiety, and pain (Burrai, 2023). On the other hand, the extended use of this tool can also produce disorientation and unhealthy escapism, which demonstrate the importance of balance its use. Therefore, it is key to consider psychological, critical, artistic and ethical aspects to mitigate such risks when using it (Balcerak and Balcerak, 2024).

GENERAL STUDIES

Octavio Chon Torres

Philosopher and university professor. He dedicates to research, academic papers elaboration, and book publication, as well as conducting conferences.

GENAI IMPACT IN TEACHING, RESEARCH, AND PHILOSOPHY

Professor Chon said that technologies such as GenAI, AR, VR, and AGI has an impact on teaching, research, and philosophy. Tools that apply these technologies are a support for the professional practice, thus it is important to use them ethically and responsibly. Moreover, Professor Chon recommends to explore the different tools that exist to find the one that best fits the user's needs and use creativity when applying them to have better results.

TECHNOLOGIES FOR THE FIELD AND DESCRIPTION

Regarding teaching and research, Professor Chon highlighted the impact of evolution and greater accessibility to GenAI. He specifically talked about ChatGPT 4.0, Google Gemini and Consensus as the tools most used in this field.

It is mainly used to formulate questions for evaluations, modify complexity, have dynamic ideas, generate images, interpret result charts, synthetize ideas, among others. He also underscored the importance of consider ethics and mention its use as a working tool. Moreover, content should always be supervised, since GenAI is not capable of replacing human judgment yet.

In the field of philosophy, Professor Chon explains that technological evolution makes a call to reflect about the nature and definition of intelligence and consciousness. A process directly related to this and that would apply these things is the transition from GenAI to AGI.

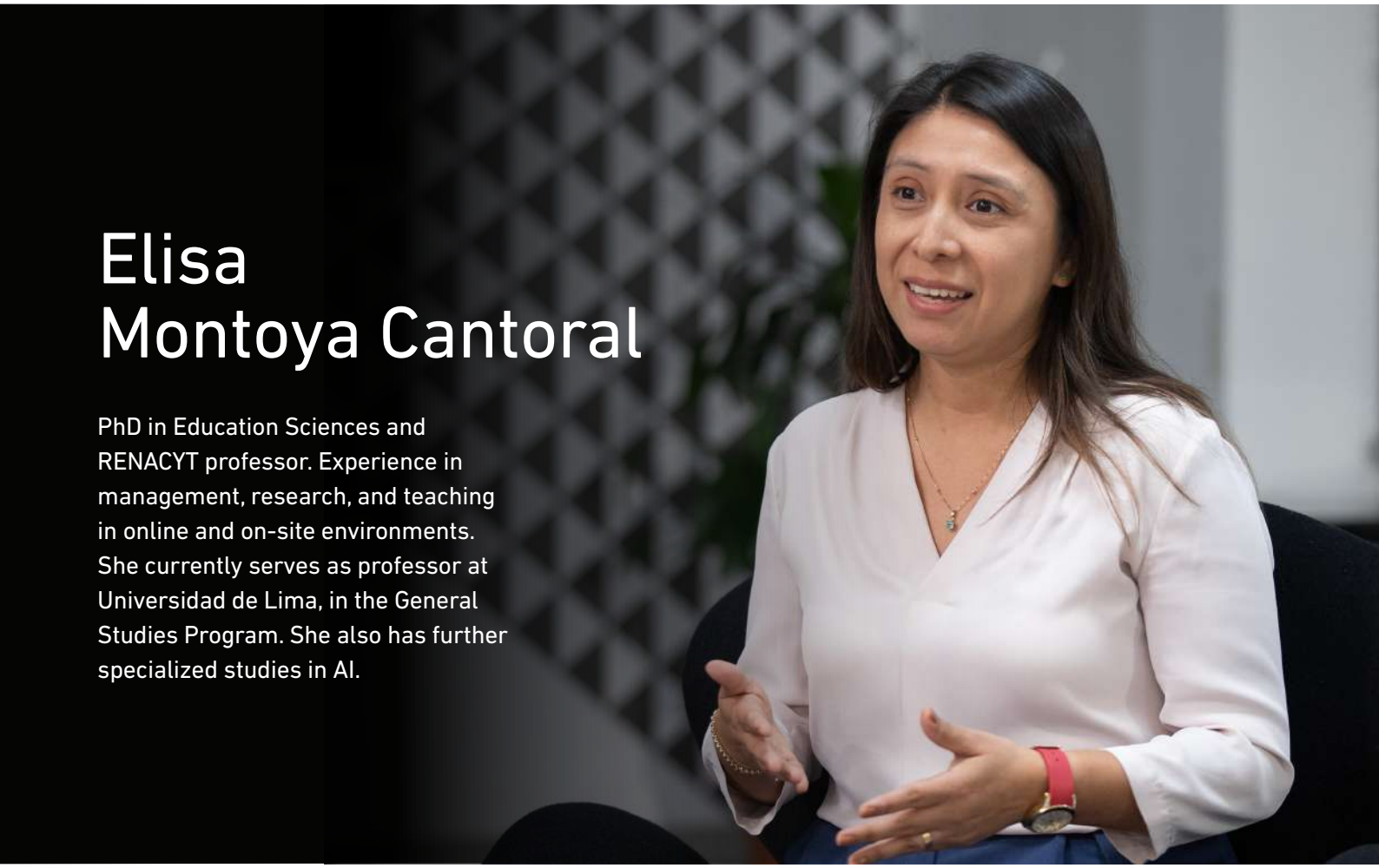
FEATURED TOOL

Goertzel and Pennachin (2007) defined the term general artificial intelligence for the first time as AI systems that possess a reasonable degree of self-understanding and autonomous self-control, and have the ability to solve a variety of complex problems in a variety of contexts, and to learn to solve new problems that they didn't know about at the time of their creation. Furthermore, authors have claimed that it is possible to reach this level of technology since particular configuration of atoms in the brain are the ones responsible for intelligence, and it is only a matter of analyzing these structures in detail to replicate them in a computer (Press, 2024).

FEATURED TOPIC

Intelligence is defined as a cognitive ability that involves seeing, understanding and comprehending, which requires reflection and experience (Fuchs, 2018). However, AI systems are now capable to conducting activities that used to be exclusively of the human mind, challenging the traditional distinction that philosophy established between natural and artificial (Harzheim, 2024). Before this paradigm shift, we need to redefine the elements that distinguish human intelligence, such as consciousness, emotions, and intuition.

The capacities of information processing and adaptation of an AI do not necessarily imply to have consciousness. The possibility to develop this type of human understanding has already been posed by researchers many years ago and it has been called general AI (Rzeszucinski, 2024). Despite this, there is no certainty that this would be possible in a near future.



Elisa Montoya Cantoral

PhD in Education Sciences and RENACYT professor. Experience in management, research, and teaching in online and on-site environments. She currently serves as professor at Universidad de Lima, in the General Studies Program. She also has further specialized studies in AI.

CHALLENGES OF INTEGRATING AI IN ACADEMIC ASSESSMENT

During 2023-2024, emerging technologies, such as AI, have largely influenced the professional scope of professors, particularly ChatGPT, Perplexity AI, Bing and Bard from Google, which are used in educational and work environments. Examples were given on how these technologies are integrated, such as using ChatGPT to create academic content. It was also addressed the importance of building skills such as critical thinking and searching information to harness these tools. Furthermore, Montoya's vision about the future role of these technologies was further discussed, emphasizing its use with criteria and without a blind dependency. Finally, ethical and privacy challenges were also addressed. Professor Montoya also said that it is quite important to use and explore these new technologies adequately, since we must keep abreast of them and adapt to the new digital environment.

TECHNOLOGIES FOR THE FIELD AND DESCRIPTION

Professor Montoya said that students have made progress in terms of shifting from using basic tools, such as videos and PowerPoint, to incorporating advanced AI, such as ChatGPT, which facilitates the production of high-quality academic content. This evolution has changed the way professors assess learning, since AI tools allow them to have more detailed and structured responses. Thus, it is important that evaluation methods adapt to promote critical and analytical skills. Professors must design activities that encourage critical thinking and creativity beyond the use of answers furnished by AI.

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FEATURED TOOLS

Perplexity AI

Innovative tool that harnesses artificial intelligence and natural language. It stands out for its capacity to understand context, provide direct answers, and keep constantly updated, in order to offer a more dynamic experience and search tool. It also features a voice-text interface, which allows us to have a more natural and personalized interaction (Uppalapati and Nag, 2024).

Bing Chat

It is a new function for the Bing research engine that allows you to "talk" with an AI-powered chatbot instead of just filling in the blanks when searching. Its large dataset comprises popular languages such as Python, Java and JavaScript. Besides generating code, Bing AI gives you suggestions to improve, optimize, or modify the generated code, which significantly saves time and resources throughout the entire software development (Codina, 2023).

FEATURED TOPIC

The main challenge of integrating AI into academic assessment—particularly in disciplines where writing texts is critical—lies in the concern of potential lack of originality of students' assignments that could have been largely influenced by AI. Therefore, it is imperative to develop new assessment methods that incorporate AI without compromising students' work. This requires a new approach to promote academic ethics among students, in order to ensure that they fully understand their responsibility of making a balance between integrating AI in the learning process and preserving academic honesty and originality.

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