



A integração da Inteligência Artificial Generativa na Educação

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O que é a IA Generativa

- **IA Generativa:** é um campo da IA que permite que as máquinas gerem conteúdo original e criativo, como imagens, texto, música, vídeo.
- **IA Tradicional:** são projetados para resolver problemas específicos.



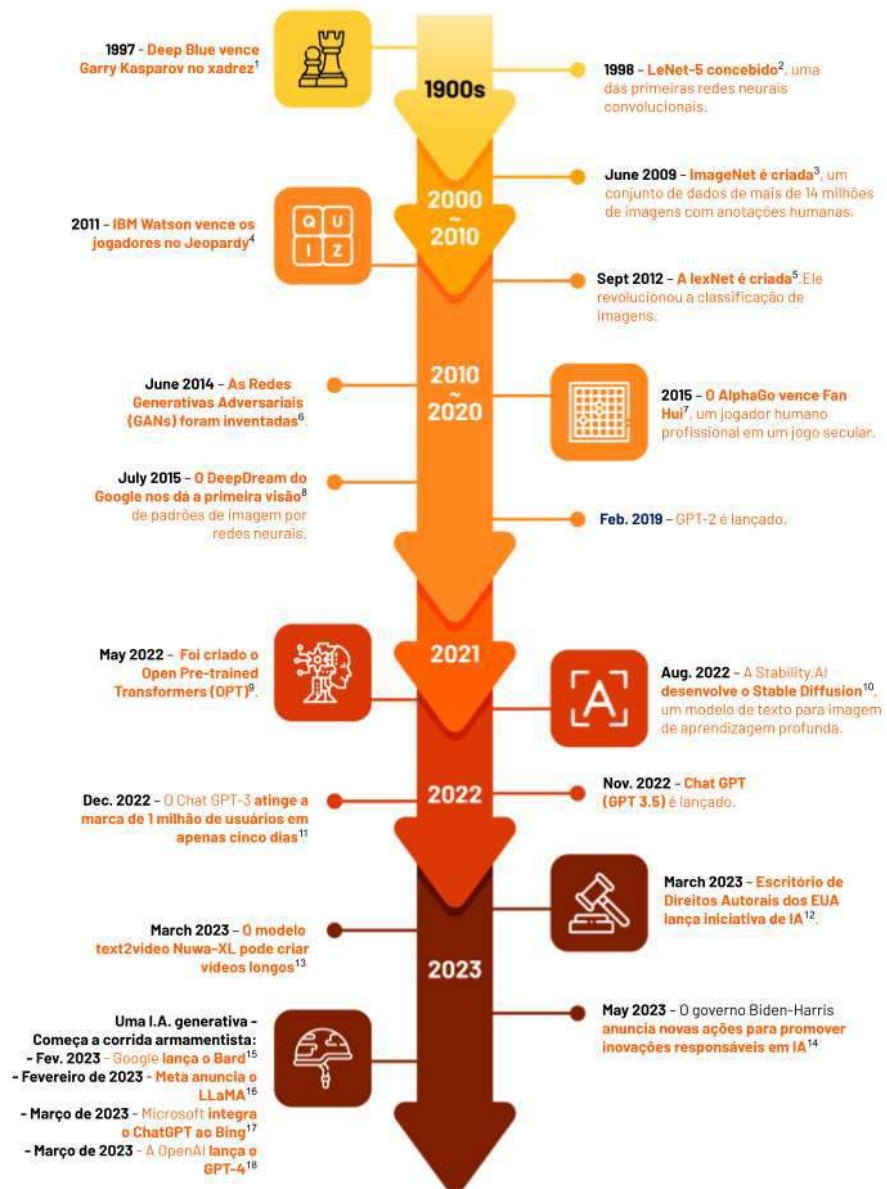
Source: <https://app.leonardo.ai/>



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Utilizar a IA Generativa



Unleashing Ingenuity: Uma linha do tempo dos principais eventos na evolução acelerada da GenA.I.

Source: <https://www.cesar.org.br/w/o-impacto-disruptivo-da-inteligencia-artificial-generativa-esta-aqui.html>



Aplicações da IA Generativa na Educação

- Ensino Personalizado e Adaptativo
- Criação de Conteúdos
- Avaliação
- Reconhecer Falhas na Aprendizagem
- Automatização de Tarefas





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Benefícios da IA Generativa na Educação

Aumento da eficiência

Aumentar a motivação dos alunos

Geração automática de exercícios

Personalizar experiências de aprendizagem

Feedback imediato



Benefícios para os Alunos

Aprendizagem personalizada e adaptativa (ITS)

Maior motivação

Feedback personalizado



Benefícios para os Docentes

Eficiência no Planeamento

Identificação de necessidades individuais

Análise de dados



Universidade Federal do Rio de Janeiro
Instituto de Engenharia de Sistemas e Computadores



IA Generativa na Educação

Desafios

**Desafios
éticos**

**Privacidade
de dados**

**Potenciais
desvios**

**Formação de
Professores**

Oportunidades

**Aumento da
motivação dos
estudantes**

**Integração de
outras tecnologias
emergentes**

**Aumento da
acessibilidade para
públicos
específicos**



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Conclusões



A IA Generativa oferece uma abordagem inovadora para a educação, permitindo uma aprendizagem personalizada e adaptativa.



Ao alavancar a tecnologia de IA, podemos criar ambientes educacionais mais envolventes e eficazes, atendendo às necessidades individuais de cada aluno.



Vamos continuar explorando e desenvolvendo o potencial da IA Generativa na educação para capacitar os alunos e prepará-los para um futuro cada vez mais digital.



Exemplos de IA Generativa

AI News and Highlights, March 2023:

1. OpenAI released ChatGPT and Whisper APIs
2. Ford launched Latitude AI
3. UBC's new AI model predicts cancer patient survival
4. Hubspot introduced Chatspot
5. Discord launches AI features.
6. New Bing crossed 100M Daily Active Users
7. GM released a new ChatGPT-like assistant
8. GPT-4 officially launched
9. Google brought AI to Google Workspace
10. Google released PaLM API
11. Microsoft launched 365 Copilot
12. First, open source text to video 1.7 billion parameter model released
13. Apple tested AI in Siri, Operation Bobcat
14. Runway released Gen-2
15. Bing launched Bing image Creator
16. Adobe launched Firefly
17. ChatGPT bug exposed some user chat history
18. GitHub launched Copilot X
19. Opera released in-browser tools
20. ChatGPT released plugins
21. Canva launched AI tools
22. Character AI raised \$150 million
23. AI-generated Pope broke the internet
24. Apple acquired an AI startup
25. Zoom released Zoom IQ
26. Replit teamed up with Google
27. Perplexity released a new iPhone app
28. A group of AI leaders called for a pause on AI
29. Goldman Sachs suggested AI impacts 300M jobs
30. UNESCO called for AI ethics implementation

AI Frontier
By Steve Nouri





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Aprender com a IA Generativa

	Example Use Cases	Example Startups
Business Function	Marketing Copywriting, SEO optimization; true personalization	Jasper copy.ai WRITER
	Sales SDR automation, sales coaching	Oliv regie.ai
	Customer Success User insights, answering tickets	Forethought CRESTA symbi.ai
	HR Job description writing, interviewing, performance reviews, AI coach, training	MARAI BETTER onloop CONVERZAI
	Legal Document drafting, synthesis, legal to non-legal translation	casetext
	Ops Research, search, synthesis, knowledge retrieval and management, manual tasks	YOU mem hello
	Finance Data entry, data summarization	
	Internal Tooling Natural language to code generation; truly custom tools that can be built by business users	Adept māyā
	Asset Creation Next gen Wikipedia, gaming studios, movie studios, news channels	Midjourney runway
	Developer	Frontend Development AI can generate unlimited designs and iterate until it finds "best"
Coding Generate test cases and create test automation		replit Moderne GitHub Copilot
Training Model Training		Replicate Hugging Face Lambda

THE 27 MOST POPULAR AI TOOLS 2023

Chatbot	ChatGPT	Bard	Bing
Video	Runway	Pictory	Descript
Productivity	Notion AI	Taskade	MeetGeek
Design	Midjourney	Adobe Firefly	Microsoft Designer
Website	10web	Durable	Imagica
Code	Copilot X	AskCodi	AWS Code Whisperer
Content	Opus Clip	Cohesive	Synthesia
Presentation	Tome	Decktopus	Gamma
Automation	Zapier	Make	Bardeen

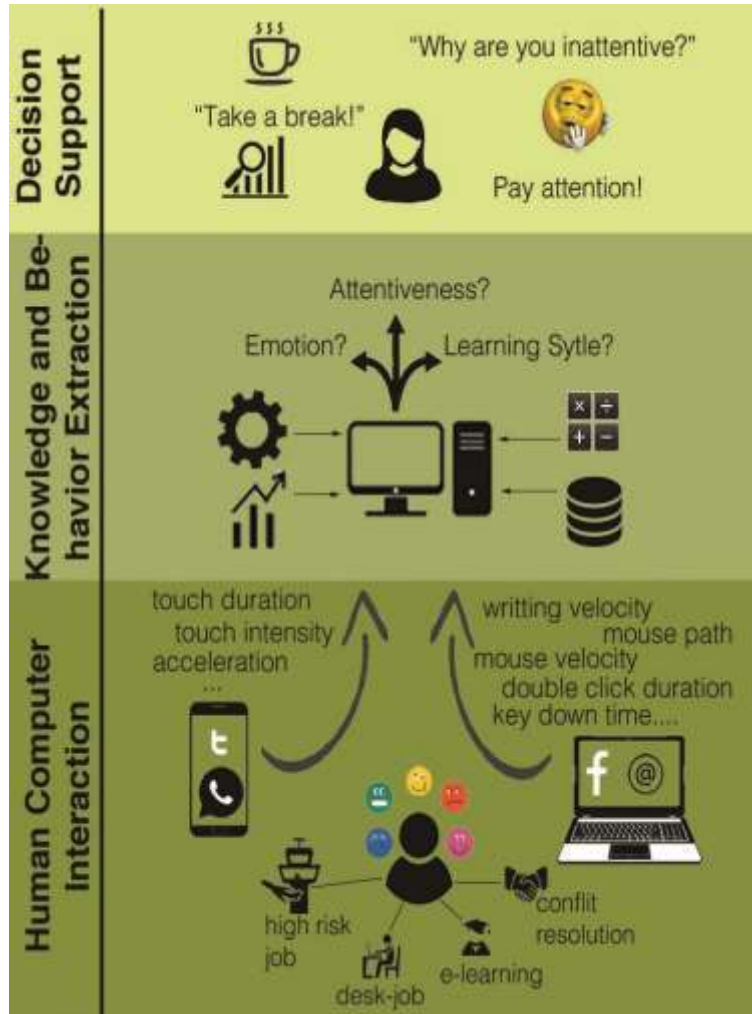
www.aifire.co

Source: <https://foundationcapital.com/jasper-and-the-past-present-and-future-of-generative-ai/>



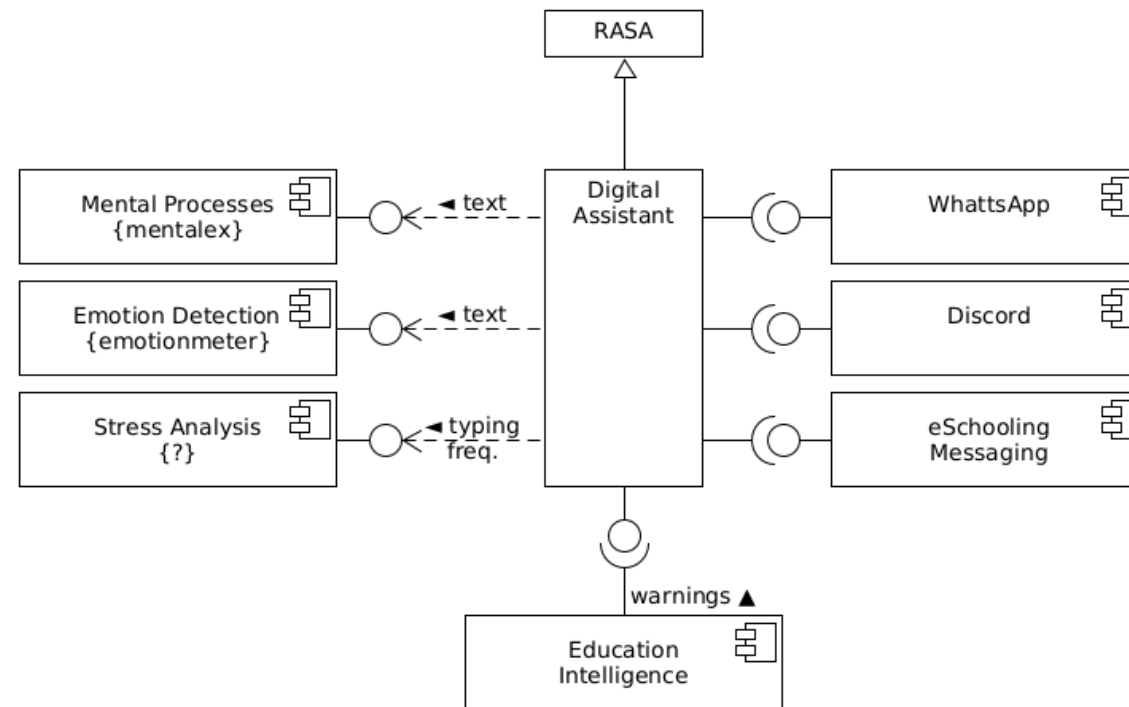
Análise de Comportamento

Stress, Fátiga, Atenção, idade, Género





E-learning Assistente Digital





The teacher of Maths is very attentive. The class went well!

TextBlob:

```
Sentiment (polarity= 0.65,  
subjectivity= 1.0)
```

NRClex:

```
{ 'fear': 0.0,  
  'anger': 0.0,  
  'anticip': 0.0,  
  'trust': 0.5,  
  'surprise': 0.0,  
  'positive': 0.5,  
  'negative': 0.0,  
  'sadness': 0.0,  
  'disgust': 0.0,  
  'joy': 0.0}
```

E-learning

Análise de Sentimentos

What a horrible day! The math grades came out, I had a negative ...

NRClex:

TextBlob:

```
Sentiment (polarity= -1,  
subjectivity= 1)
```

```
{ 'fear': 0.25,  
  'anger': 0.25,  
  'anticip': 0.0,  
  'trust': 0.0,  
  'surprise': 0.0,  
  'positive': 0.0,  
  'negative': 0.25,  
  'sadness': 0.0,  
  'disgust': 0.25,  
  'joy': 0.0}
```



E-learning Análise de sentimentos

Welcome the Student

Sentiment Analysis



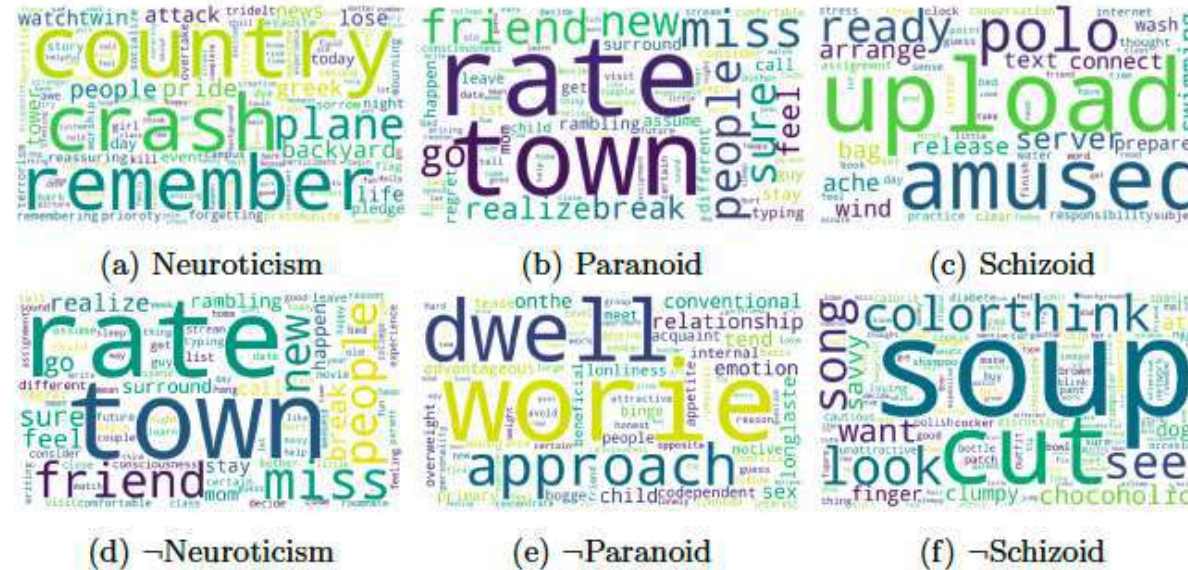
Form is activate (student id)



Search for risk situation



E-learning Processos Mentais



Algorithm 1 Meaningful Words per Trait.

```

Require: Essay_Dataset  $\leftarrow$  pipe(lemmatize | remove stop words | standardize in lowercase | extract
adjectives, verbs and nouns).
procedure GETWORDSFOR(trait)
  trait_texts  $\leftarrow$  retrieveTextFor(trait, Essay_Dataset)
  TF/IDF  $\leftarrow$  computeTF/IDF(trait_texts)
  for word, tf/idf in TF/IDF do
    if tf/idf > 0 then
      Words  $\leftarrow$  + word
    end if
  end for
  return Words
end procedure
for trait in big5 do
  Used_Lexicon  $\leftarrow$  + getWordsFor(trait)
  A voided_Lexicon  $\leftarrow$  + getWordsFor(big5 - trait)
end for
  
```

	words	synonym	words & synonym	%	nouns	verbs	adj.
paranoid	87	1003	1090	32%	523	443	124
schizoid	53	762	815	24%	407	335	75
neuroticism	136	1391	1527	44%	793	560	174
total	276	3156	3432	100%	1723	1338	373
coverage	69%	—	81%	—	—	—	—



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Pblicações

Springer Link

Conference proceedings | © 2023

Methodologies and Intelligent Systems for Technology Enhanced Learning, Workshops, 12th International Conference

Home > Conference proceedings

Editors: Zuzana Kubincová, Alessandra Melonió, Dalila Durães, Davide Rua Carneiro, Mehdi Rizvi, Levente Barina

International Conference on Intelligent Data Engineering and Automated Learning

IDEAL 2022: **Intelligent Data Engineering and Automated Learning – IDEAL 2022**

Home > Intelligent Data Engineering and Automated Learning – IDEAL 2022 > Conference paper

EduBot: A Proof-of-Concept for a High School Motivational Agent

Hugo Faria, Maria Araújo Barbosa, Bruno Veloso, Francisco S. Marcondes, Celso Lima, Dalila Durães & Paulo Novais

International Conference on Innovative Techniques and Applications of Artificial Intelligence

SGAI-AI 2022: **Artificial Intelligence XXXIX** pp 321–326 | [Cite as](#)

Home > Artificial Intelligence XXXIX > Conference paper

MentaLex: A Mental Processes Lexicon Based on the Essay Dataset

Francisco S. Marcondes, Maria Araújo Barbosa, Ricardo Queiroz, Luis Brito, Adelino Gala & Dalila Durães

International Conference in Methodologies and Intelligent Systems for Technology Enhanced Learning

MIS4TEL 2022: **Methodologies and Intelligent Systems for Technology Enhanced Learning, Workshops, 12th International Conference** pp 43–52 | [Cite as](#)

Home > Methodologies and Intelligent Systems for Technology Enhanced Learning... > Conference paper

A Systematic Review on Student Failure Prediction

Bruno Veloso, Maria Araújo Barbosa, Hugo Faria, Francisco S. Marcondes, Dalila Durães & Paulo Novais

International Conference on Intelligent Data Engineering and Automated Learning

IDEAL 2021: **Intelligent Data Engineering and Automated Learning – IDEAL 2021**

Home > Intelligent Data Engineering and Automated Learning – IDEAL 2021 > Conference paper

A Profile on Twitter Shadowban: An AI Ethics Position Paper on Free-Speech

Francisco S. Marcondes, Adelino Gala, Dalila Durães, Fernando Moreira, José João Almeida, Varis Baidi & Paulo Novais

World Conference on Information Systems and Technologies

WorldCIST 2021: **Trends and Applications in Information Systems and Technologies**

Home > Trends and Applications in Information Systems and Technologies > Conference paper

Emotions and Intelligent Tutors

Rámon Trujala, Dalila Durães & Paulo Novais

Neurocomputing

Volume 272, 10 January 2018, Pages 46–54

Characterizing attentive behavior in intelligent environments

Dalila Durães^a, Davide Carneiro^{b,c}, Amparo Jiménez^d, Paulo Novais^b

Future Generation Computer Systems

Volume 92, March 2019, Pages 549–559

Predicting completion time in high-stakes exams

Davide Carneiro^a, Paulo Novais^b, Dalila Durães^c, José Miguel Pego^{a,c}, Nuno Sousa^{a,c}

Enriching behavior patterns with learning styles using peripheral devices

Dalila Durães, Fernando de la Prieta & Paulo Novais

Knowledge and Information Systems 60, 1645–1662 (2019) | [Cite this article](#)

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