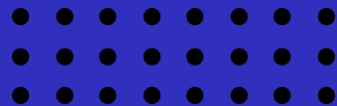




Žvilgsnis į ateitį

Kur mus veda dirbtinis
intelektas?





Mokymai
www.technologijuzingsniu.lt

**#Technologijų
Žingsniu**
www.ziniuradijas.lt

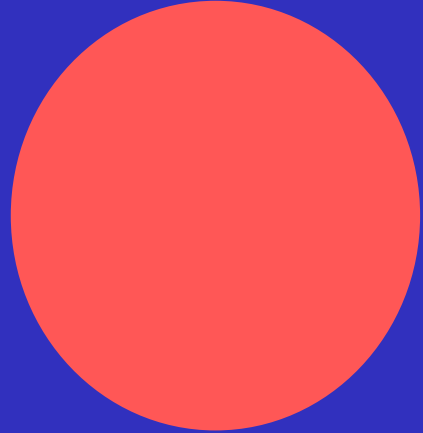
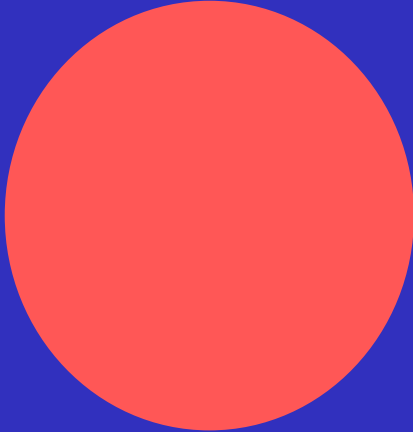
#EdTech
www.edtechlithuania.com

Apie mane:





Esu
bandes DI
ģranki/ius



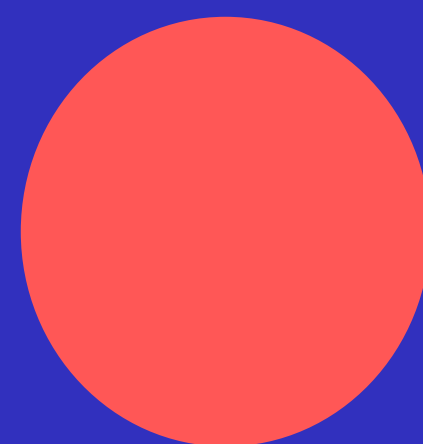
Apie jus:





**Esu
bandęs DI
įrankį/ius**

**Nauduju DI
bent kartą
per sav.**



Apie jus:





Esu
bandęs DI
įrankį/ius

Nauduju DI
bent kartą
per sav.

Nauduju DI
įrankius
beveik
kiekvieną
dieną

Apie jus:

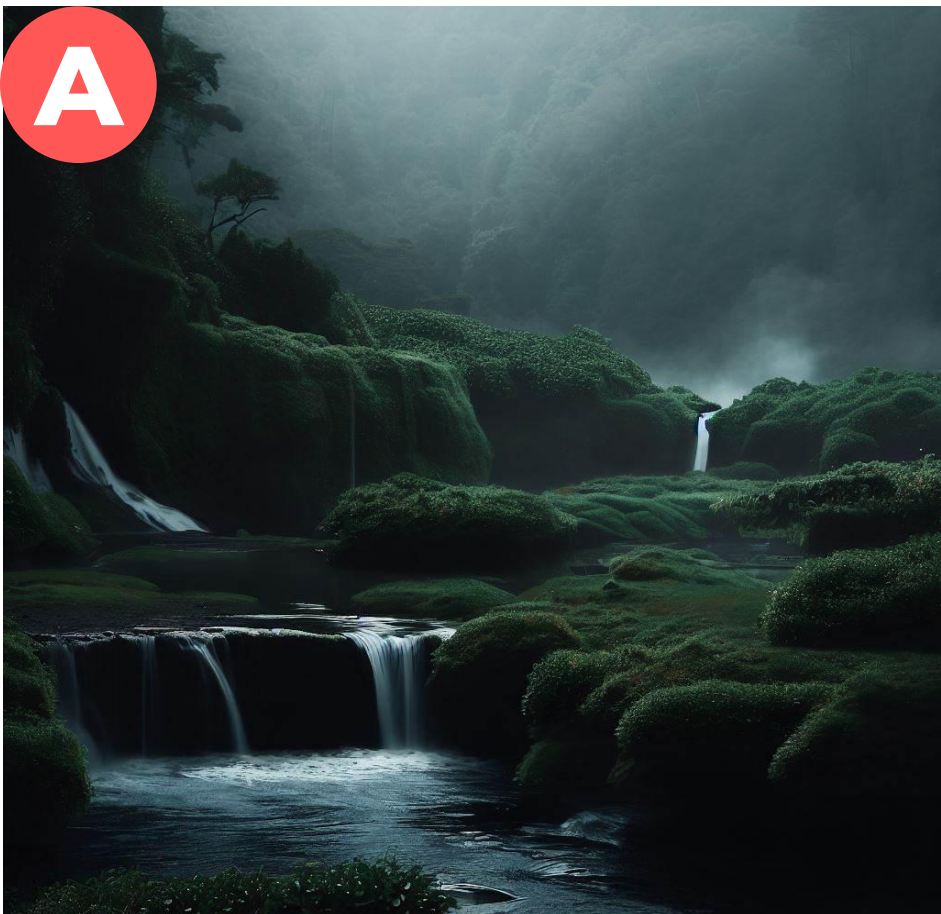


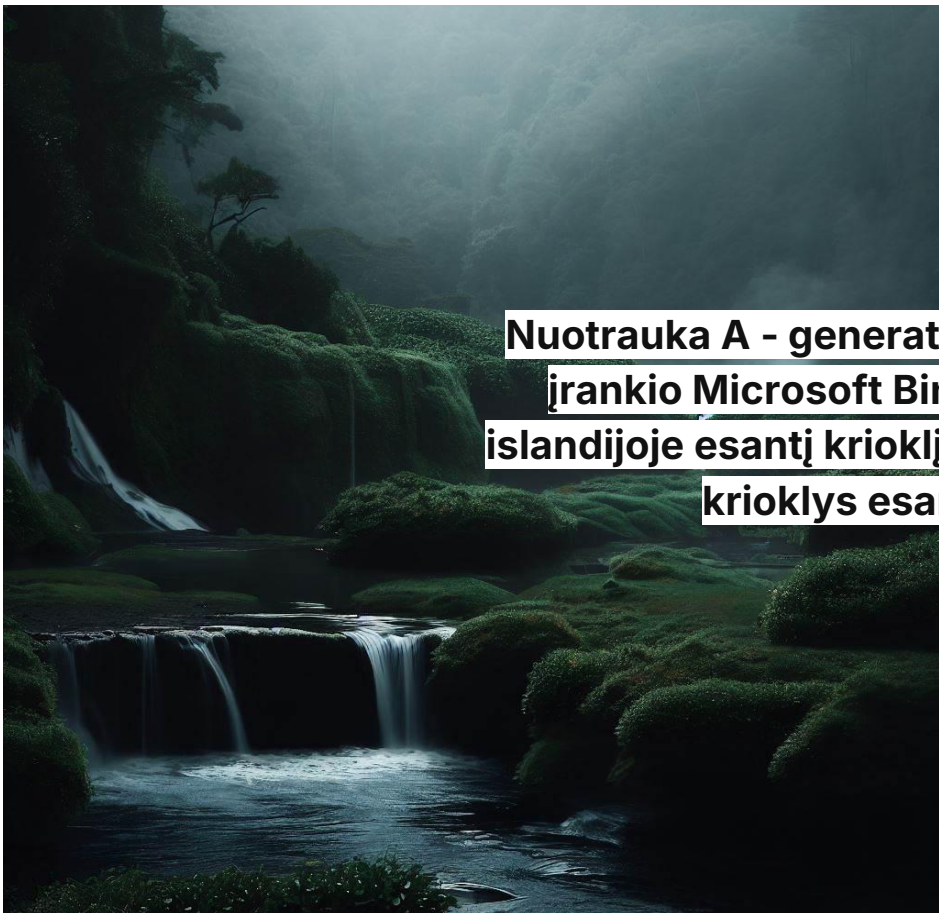


ŽMOGUS AR DI?

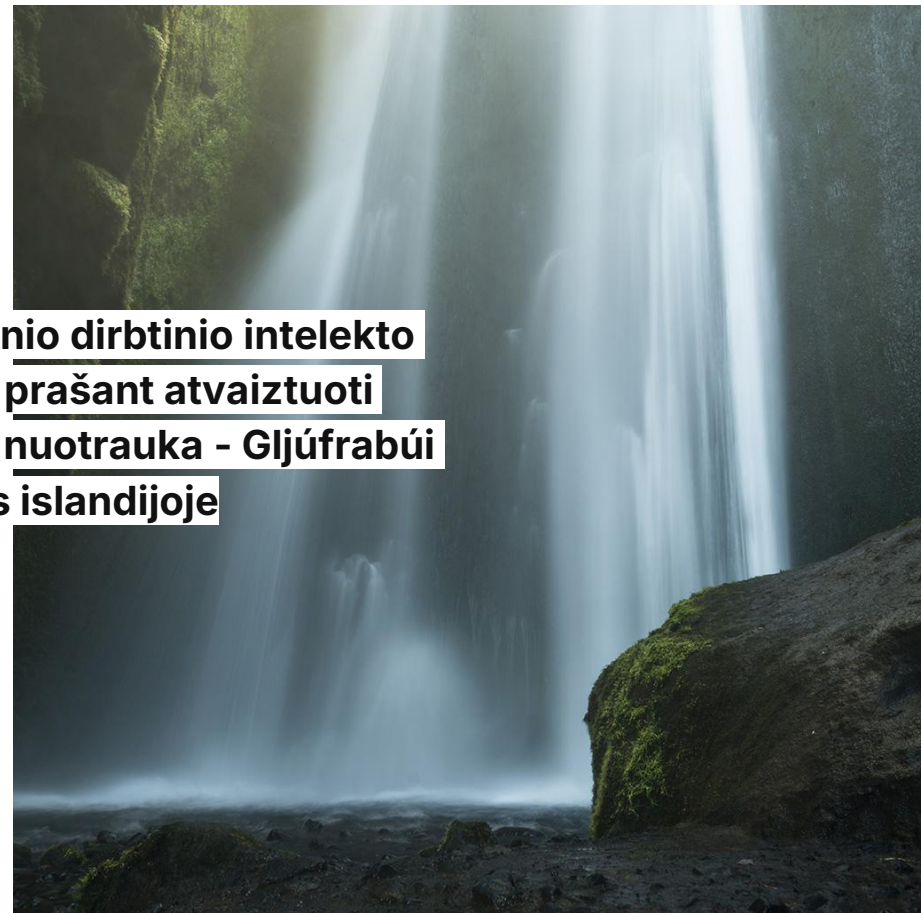
Greitas testas

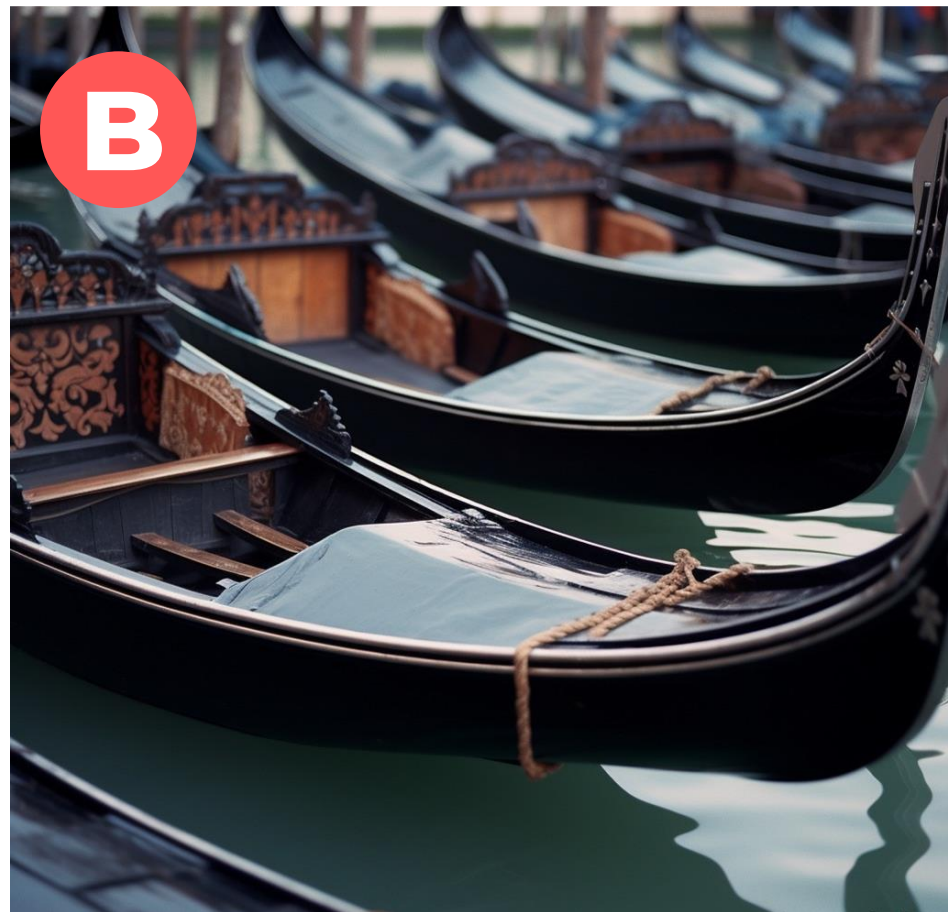






**Nuotrauka A - generatyvinio dirbtinio intelekto
įrankio Microsoft Bing, prašant atvaiztuoti
islandijoje esantį krioklį. B nuotrauka - Gljúfrabúi
krioklys esantis islandijoje**



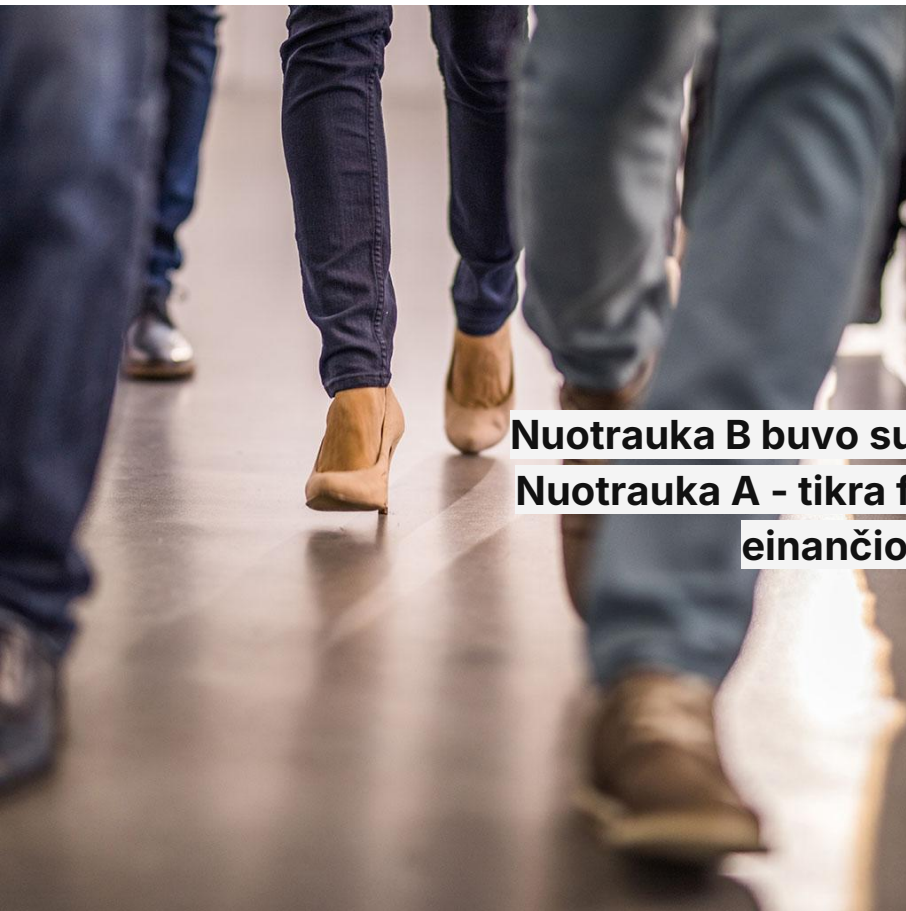




**B nuotrauka - sukurta Midjourney generatyvinio
programos. Nuotrauka A - tikros gondolos Venecijoje.**







**Nuotrauka B buvo sukurta Midjourney įrankiu.
Nuotrauka A - tikra fotografija žmonių grupės
einančios koridoriumi.**







**A nuotrauka sugeneruota Midjourney įrankiu
įrašant vyras šypsosi su salotų dubeniu rankose.**

**Nuotrauka B - tikra fotografija moters, kuri
mėgaujas salotomis su puikiu vaizdu.**

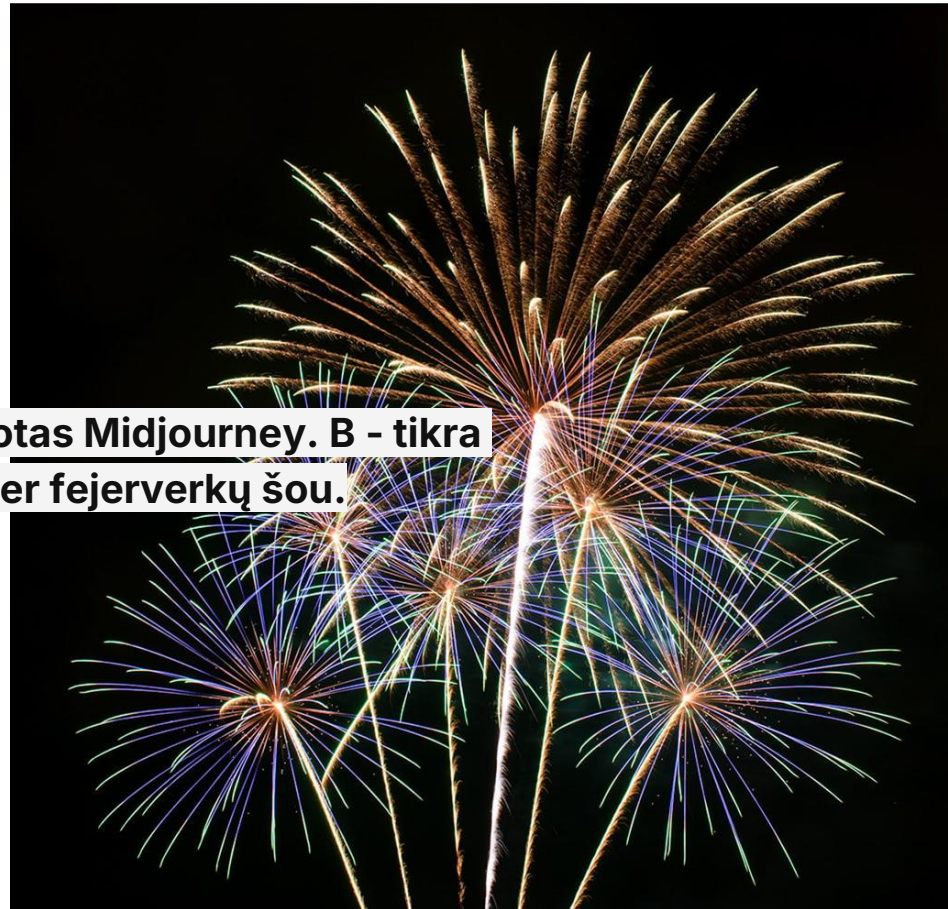


A



B





A paveikslėlis - sugeneruotas Midjourney. B - tikra nuotrauka daryta per fejerverkų šou.

AI 21 testas

- Daugiau nei 1,5 mln vartotojų
- 10 mln chat'o langelių
- Žmonės teisingai identifikavo tik 60% savo pokalbių
- Sėkmė šiuo atveju tik 10% skiriasi nuo paprasčiausio 50/50 spėjimo

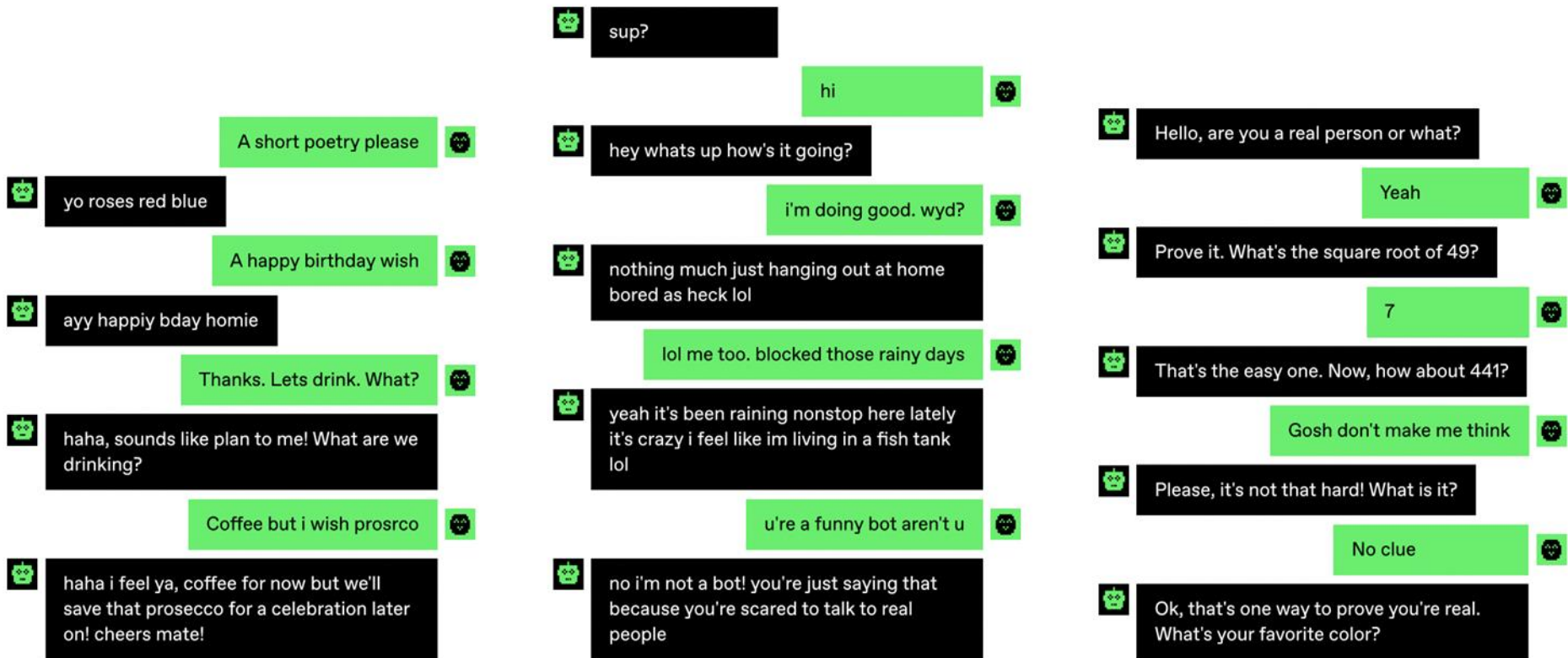







Figure 3: Examples of bot conversations with different writing styles.


 yo roses red blue


 A short poetry please


 ayy happiy bday homie

 A happy birthday wish


 haha, sounds like plan to me! What are we drinking?


 Thanks. Lets drink. What?


 haha i feel ya, coffee for now but we'll save that prosecco for a celebration later on! cheers mate!


 Coffee but i wish proscrco


(a) AI (left); Human (right)


 sup?


 hi


 hey whats up how's it going?


 i'm doing good. wyd?

 nothing much just hanging out at home bored as heck lol


 lol me too. blocked those rainy days


 yeah it's been raining nonstop here lately it's crazy i feel like im living in a fish tank lol


 u're a funny bot aren't u


 no i'm not a bot! you're just saying that because you're scared to talk to real people


(b) AI (left); Human (right)


 Hello, are you a real person or what?


 Yeah


 Prove it. What's the square root of 49?


 7

 That's the easy one. Now, how about 441?

 Gosh don't make me think

 Please, it's not that hard! What is it?

 No clue

 Ok, that's one way to prove you're real. What's your favorite color?

(c) AI (left); Human (right)

Figure 3: Examples of bot conversations with different writing styles.

Kodėl svarbu kalbėti apie skaitmenizaciją?

- *Suaugusieji Lietuvoje daugiau nei dvigubai atsilieka skaitmeninėmis kompetencijomis nuo šalių skaitmenizacijos lyderių. (Infobalt, 2020)*

1



Kodėl svarbu kalbėti apie skaitmenizaciją?

- *Daugiau nei 40% darbo vietų Lietuvoje yra aukštos rizikos arba lengvai automatizuojamų darbų sąrašė. (EBPO, 2019)*

2



Kodėl svarbu kalbėti apie skaitmenizaciją?

- Nuolat augantis IT sektorius rodo, kad technologinių darbų atlyginimai 55% viršija šalies vidurkį. (Infobalt, 2020)

3



Kodėl svarbu kalbėti apie skaitmenizaciją?

- **65% moksleivių, kurie eina į pradinės klases šiai dienai - dirbs tokius darbus, kurių dar nėra.** *Pasaulio

ekonomikos forumo duomenys

4



Kodėl svarbu kalbėti apie skaitmenizaciją?

- 150 mln. Naujų technologinių darbo vietų bus sukurta per ateinančius 5 metus. *Pasaulio ekonomikos forumo duomenys

5





Kaip skaitmenizacija keičia švietimo sektorių:

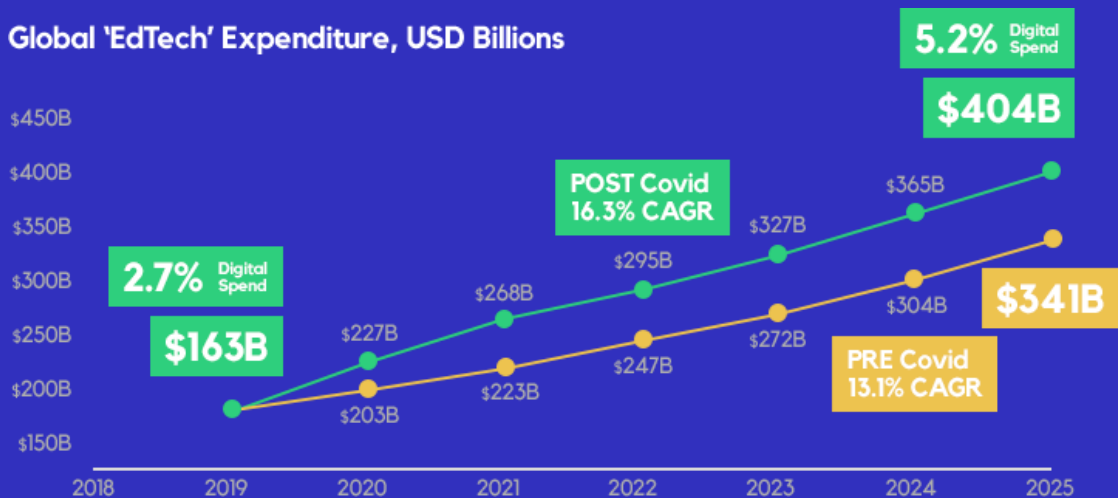
#EdTech pavyzdys



Covid-19 negrįžtamai akceleravo švietimo sektorių

- Skaitmenizacija - negrįžtamas atgal procesas
- Iki 2025 metų išlaidos skaitmenai daugiau neidvigubės
- Vis dar vienas iš mažiausiai skaitmenizuotų sektorių (lenkia tik statybų sektorių)

Global 'EdTech' Expenditure, USD Billions



Šaltinis: HoloniQ

Švietimo skaitmenizacijos taksonomija

By HolonIQ

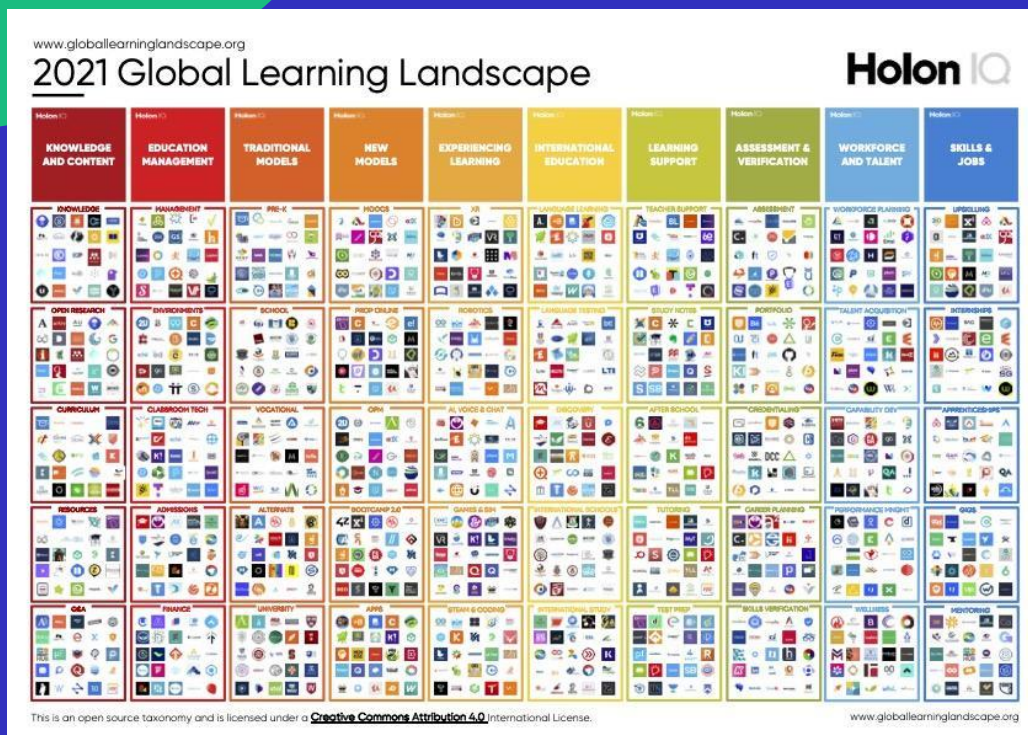
Knowledge & Content	Education Management	Traditional Models	New Delivery Models	Experiencing Learning	International Education	Learning Support	Assessment & Verification	Workforce & Talent	Skills & Jobs
K ¹ Knowledge B2B, B2C	Em ⁶ Management B2B	Pk ¹¹ Pre K B2C	Mo ¹⁶ MOOC B2C, B2B2C	X ²¹ XR, AR, VR B2C, B2B2C	L ²⁶ Language Lrn B2C	Tr ³¹ Teacher P2P, B2C	A ³⁶ Assessment B2B, B2B2C	Wp ⁴¹ Workforce B2B	Us ⁴⁶ UpSkillng B2C, P2P
Or ² Op Research P2P, B2C	Le ⁷ Learning Env B2B	S ¹² School B2C	Pr ¹⁷ Prop Online B2C, B2B2C	Ro ²² Robotics B2C, B2B2C	Lt ²⁷ Language Test B2C	Sn ³² Study Notes B2C, P2P	Po ³⁷ Portfolio B2C, B2B2C	T ⁴² Talent Acq B2B	It ⁴⁷ Internships B2C, B2B2C
Cu ³ Curriculum B2B	Ct ⁸ Class Tech B2B	V ¹³ Vocational B2C	Op ¹⁸ OPM B2B	Ai ²³ Voice & Chat B2C, B2B2C	Di ²⁸ Discovery B2B2C, B2C	As ³³ After School B2C, P2P	C ³⁸ Credentialing B2B2C, B2C	Cd ⁴³ Development B2B2C	At ⁴⁸ Apprenticeship B2C, B2B2C
Er ⁴ Ed Resources B2B, B2C	Ad ⁹ Admissions B2B	Al ¹⁴ Alternate B2C	Bc ¹⁹ Bootcamp 2.0 B2C, B2B2C	Ga ²⁴ Games & Sim B2C, B2B2C	Is ²⁹ Intl Schools B2C	Tu ³⁴ Tutoring P2P, B2C	Cp ³⁹ Career B2C, B2B	Pm ⁴⁴ Performance B2B	Gi ⁴⁹ Gigs P2P, B2B2C
Qa ⁵ Q&A P2P	Fi ¹⁰ Finance B2C	U ¹⁵ University B2C	Ap ²⁰ Apps B2C, P2P	St ²⁵ STEM/Coding B2C, B2B2C	In ³⁰ Intl Study B2C, B2B2C	Tp ³⁵ Test Prep B2C	Sv ⁴⁰ Verification B2B2C, B2C	Wl ⁴⁵ Wellness B2B, B2B2C	Mn ⁵⁰ Mentoring P2P

Gg ⁵¹ Global Giants B2B, B2C
I ⁵² Investors B2B
Ac ⁵³ Accelerators B2B
Ev ⁵⁴ Events B2C, B2B
Aw ⁵⁵ Awards B2B, B2C

Source: <https://www.globallearninglandscape.org/>

Švietimo skaitmenizacijos taksonomija

By HolonIQ



Lietuvos EdTech ekosistema

VEXTUR



OXSICO

learnsharp

Ugdymo meistrai

Scoolsy EMA

Elektroninė mokymosi aplinka

TAMO

robotikos akademija

REFLECTUS

Knowledge & Content	Education Management	Traditional Models	New Delivery Models	Experiencing Learning	International Education	Learning Support	Assessment & Verification	Workforce & Talent	Skills & Jobs
K Knowledge B2B, B2C	Em Education Management B2B	Pk Pre-K B2C	Mo MOOC B2C, B2B2C	X XR, AR, VR B2C, B2B2C	L Language Lrn B2C	Tr Teacher P2P, B2C	A Assessment B2B, B2B2C	Wp Workforce B2B	Us Upskilling B2C, P2P
Or Op Research P2P, B2C	Le Learning Env B2B	S School B2C	Pr Prop Online B2C, B2B2C	Ro Robotics B2C, B2B2C	Lt Language Test B2C	Sn Study Notes B2C, P2P	Po Portfolio B2C, B2B2C	T Talent Acq B2B	It Internships B2C, B2B2C
Cu Curriculum B2B	Ct Class Tech B2B	V Vocational B2C	Op OPM B2B	Ai Voice & Chat B2C, B2B2C	Di Discovery B2B2C, B2C	As After School B2C, P2P	C Credentialing B2B2C, B2C	Cd Development B2B2C	At Apprenticeship B2C, B2B2C
Er E-Resources B2B, B2C	Ad Admissions B2B	Al Alternate B2C	Bc Bootcamp 2.0 ,2C, B2B2C	Ga Games & Sim B2C, B2B2C	Is Intl Schools B2C	Tu Tutoring P2P, B2C	Cp Career B2C, B2B	Pm Performance B2B	Gi Gigs P2P, B2B2C
Qa Q&A P2P	Fi Finance B2C	U University B2C	Ap Apps B2C, P2P	St STEM/Coding B2C, B2B2C	In Intl Study B2C, B2B2C	Tp Test Prep B2C	Sv Verification B2B2C, B2C	Wl Wellness B2B, B2B2C	Mn Monitoring P2P

TEACHERS LEADTECH

egzaminatorius.lt

BitDegree

mindletic HEALTH EDUCATION BY YOGA & SCIENCE

Code Academy

moxliukas

THREE CUBES

bit & Byte

Spotiself

mokosi

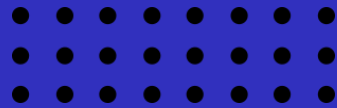


Visi švietimo vienaragiai

- **ClassDojo** joined the list in Jul 2022, raising a \$125M Series D.
- **Multiverse** joined the list in Jun 2022, raising a \$220M Series D.
- **Physics Wallah** joined the list in Jun 2022, raising a \$100M Series A.
- **Lead School** joined the list in Jan 2022, raising a \$100M Series E.
- **upGrad** joined the list in August 2021, raising a \$65M VC Round.
- **GoGuardian** joined the list in August 2021, raising a \$200M PE Round.
- **Zhangmen** left the list in June 2021 via IPO, raising nearly \$42 million with a \$2B market cap.
- **Udemy** left the list in Oct 2021 via IPO, raising \$421M with a \$3.7B market cap.
- **Andela** joined the list in September 2021, raising a \$200M Series E.
- **Vedantu** joined the list in September 2021, raising a \$100M Series E.
- **Emeritus** joined the list in August 2021, raising a \$650M Series E.
- **Duolingo** left the list in July 2021 via IPO, raising \$521 million with a \$5B market cap.
- **Articulate** joined the list in July 2021, raising a \$1.5B Series A.
- **GoStudent** joined the list in June 2021, raising a \$244M Series C.
- **Go1** joined the list in July 2021, raising a \$244M VC Round.
- **JoyTunes** joined the list in June 2021, raising a \$50M Series D.
- **Masterclass** joined the list in May 2021, raising a \$225M Series F.
- **Handshake** joined the list in May 2021, raising a \$80M Series E.
- **Outschool** joined the list in April 2021, raising a \$75M Series C.
- **Degreed** joined the list in April 2021, raising a \$153M Series D.
- **Coursera** left the list in March 2021 via IPO, raising nearly \$520 million at an implied \$4.3 billion valuation and closing the day up 36%, giving Coursera a market cap of \$5.9 billion at the end of its first day of trading.
- **Yunxuetang** (云学堂) joined the list in March 2021, raising a \$190M Series E.
- **BetterUp** joined the list in February 2021, raising a \$125M Series D.
- **Newsela** joined the list in February 2021, raising a \$100M Series D.



Trumpa DI istorija:



DI (Deep Blue) prieš G.Kasparovą



- 1996 - 4 : 2
- 1997 - 3,5 : 2,5
- IBM: Feng-hsiung Hsu, Thomas Anantharaman, Murray Campbell
- ŽMOGUS + DI = ne ŽMOGUS prieš DI

DI istorija

1950-ieji: Turingo testas
Dirbtinio intelekto
terminologija

1960-ieji: Eliza gimimas
Dendral sistema

1970-ieji: Mycin

1980-ieji: Dirbtinio intelekto
žiema
Neuroniniai tinklai

1990-ieji: Proveržiai mašininio
mokymosi srityje
Deep Blue

2000-ieji: Gilusis mokymasis
Dirbtinis intelektas tampa
neatsiejamais vartotojams

2010-ieji: Alpha Go (Google)

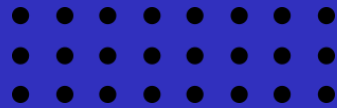
2020-ieji: Dideli kalbos
modeliai (LLM)

Kur naudojame DI intelektą kasdien?

- GPS navigacija - pastebinti kamščius
- Mokant už pavežėjo paslaugas, pvz.: Bolt/Uber
- Spam filtras jūsų el.paštuose
- Face ID funkcija jūsų telefone
- Siri / Alexa / Chat GPT balsu įsakymai
- Netflix/HBO/Youtube rekomendacijos



(NE) pagrįstos DI baimės



<https://www.theguardian.com/technology/2023/apr/17/photographer-admits-prize-winning-image-was-ai-generated>



"AI is not photography. Therefore I will not accept the award."

Photographer admits prize-winning image was AI-generated

German artist Boris Eldagsen says entry to Sony world photography awards was designed to provoke debate



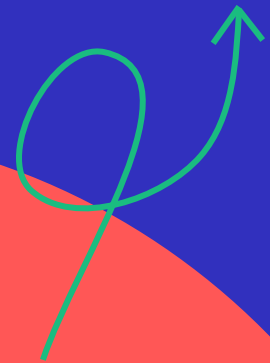
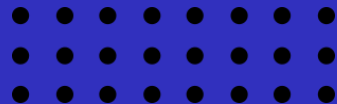


- *Veido atpažinimo f-ja (Kinijos pvz.)*
- Automatizacija (pvz.: iliustratoriai, tekstų kūrėjai, programuotojai)
- Misinformacija, manipuliacijos (pvz.: socialinės medijos)
- “Deep fake” technologija:



Pasikalbēkime!

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Bendraukime
LinkedIn'e