The impact of cutting edge AI technologies on our educational systems

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מכון
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Dr. Shaked - Bio

- ✓ Ph.D. in Computational Linguistics in NLP from CUNY New York

- ✓ Head of MDS -Multidisciplinary Studies & CS Faculty member

- ✓ R&D in speech processing in Bell Labs, IBM & more

- ✓ Vast Industry experience: Speech platforms, VUI Dialog design, Call Center technologies and Multimodality

- ✓ Consulting for startups and enterprises

- ✓ My favorite: Avatars & Bots

AI

Multimodality

NLP
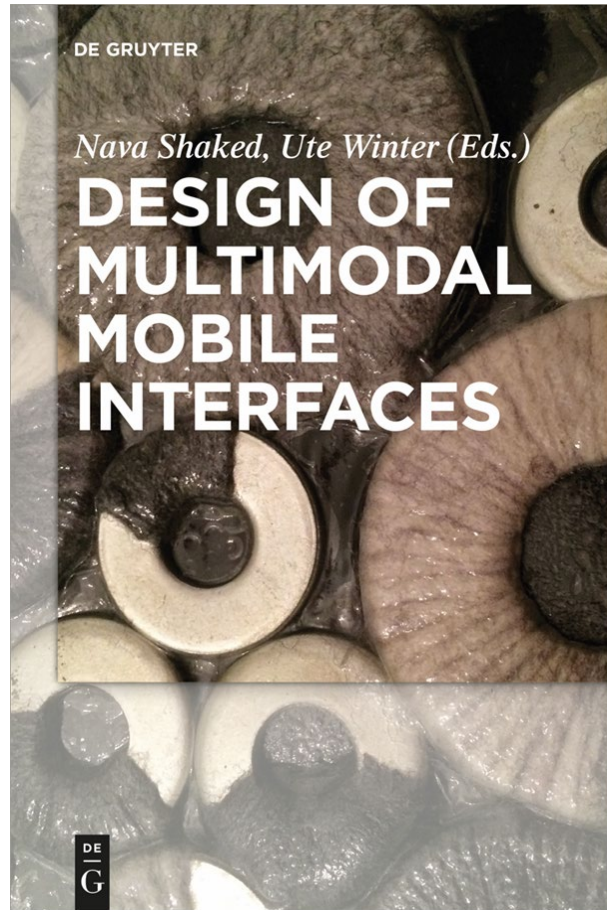
Ethics & AI

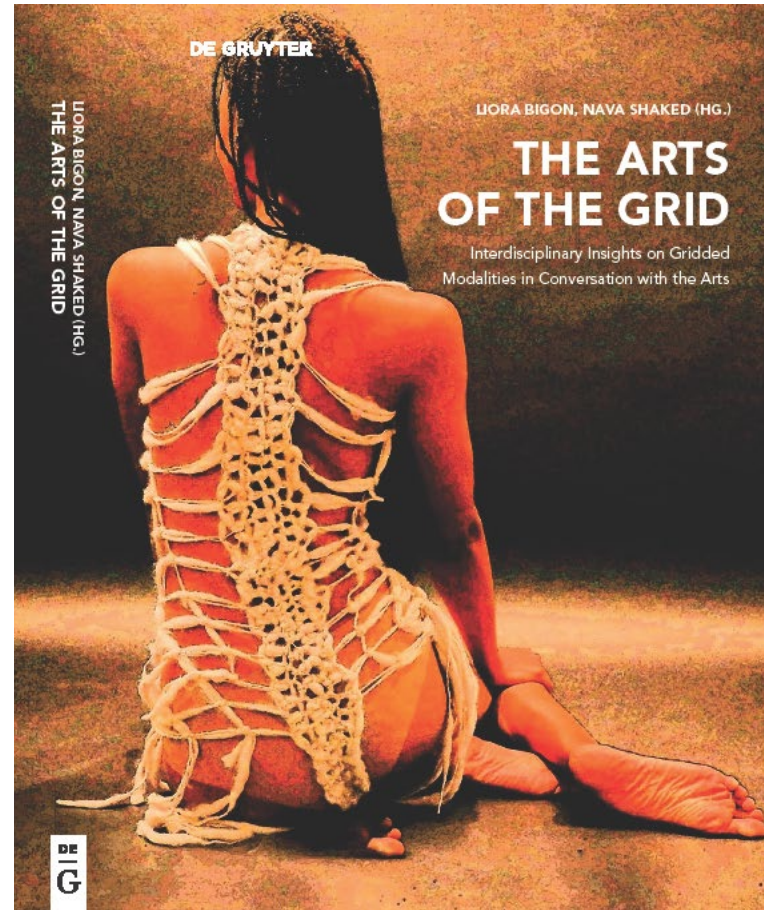Conversational Interaction

BOTS & AVATARS

Speech processing

2016

2021

TMI

Diff Approaches

Many Disciplines

Why?

Industry vs. academy

Agenda

Change rate

AI Spectrum

Narrow AI	Generative AI	Edge AI	General AI
Google Duplex, Bots	DALL·E 2 Chef Watson, ChatGPT, BART	smart utility grid streaming video optimization, and drone management.	AI for all purposes

AI influencing higher education

AI technologies and implementations are here

We are still looking for the right format…

Digital Natives Vs. Digital Immigrants

Where should we focus first?

AI for education - SWOT

Strengths	Weaknesses
Opportunities	Threats

The Strengths:

- Personalized learning
- Intelligent tutoring systems
- Automated administrative tasks
- Virtual assistants and chatbots
- Enabling data analysis and predictive analytics
- Fostering research and innovation
- Facilitated collaboration among researchers

The weaknesses:
AI challenges higher education

- Ethical concerns & code
- Potential lack of human interaction
- Biases and inequalities in AI algorithms
- Changing the rules of teaching
- Potential job displacement
- A need for significant investments
- Maintenance & learning curve

Threats:

- Massive Open Online Courses (MOOCs) have gained popularity,
- What is the role of the lecturer – is traditional classroom-based education dead?
- Do we need academic degree education? Or skilling is enough?
- What is the nature of the new educator?

The Opportunity:
The Old Approach Vs The New approach

- Change the way we consume data

- The new "knowledge"

- The power of SKILLS

- Use AI creatively

- Critical thinking and research

Accessibility

Grammarly

the digital writing assistant that uses AI to check for grammar, spelling, and punctuation errors ...

Otter.ai

Otter AI helps students record and transcribe lectures and their voices simultaneously, seamless integrationwith apps like Zoom, Google Meet, and Microsoft Teams.

Edmodo uses AI to personalize learning experiences, provide real-time feedback, and offer insights into student performance to assist in the learning process

Cognii - Virtual learning assistant tool that provides one on one tutoring and customized personalization and guidance for each student to address their respective needs.
Relying on natural language processing conversational technology which helps in boosting critical thinking skills in students.

Nearpod - interactive learning platform that utilizes AI to create engaging and immersive lessons. offers a library of ready-to-use lessons and allows educators to customize their own interactive presentations, quizzes, and virtual reality experiences, fostering active student participation and feedback.

https://www.eklavvya.com/blog/ai-edtech-tools/#23_Nearpod

https://theresanaiforthat.com/

base (May/2020)

- GPT-3 Small 125M
- GPT-3 Large 760M
- GPT-3 2.7B
- GPT-3 13B

- GPT-3 Medium 350M
  ada
- GPT-3 XL 1.3B
  babbage
- GPT-3 6.7B
  curie
- **GPT-3 175B**
  davinci

special (Dec/2021)

- WebGPT

Key
Model name / Parameters / (Instruction type)
API name

- ☐ Open via API
- ☐ Research only
- ☐ **Popular**

embeddings (Jan/2022)

- ***text-embedding-ada-002***
- ➤ text similarity
  - *text-similarity-ada-001*
  - *text-similarity-babbage-001*
  - *text-similarity-curie-001*
  - *text-similarity-davinci-001*
- ➤ text search
  - *text-search-ada-doc-001*
  - *text-search-ada-query-001*
  - *text-search-babbage-doc-001*
  - *text-search-babbage-query-001*
  - *text-search-curie-doc-001*
  - *text-search-curie-query-001*
  - *text-search-davinci-doc-001*
  - *text-search-davinci-query-001*
- ➤ code search
  - *code-search-ada-code-001*
  - *code-search-ada-text-001*
  - *code-search-babbage-code-001*
  - *code-search-babbage-text-001*

instruct (old)

- *curie-instruct-beta* 6.7B
- InstructGPT-3 175B (SFT)
  davinci-instruct-beta
- *text-ada-001* 350M
- *text-babbage-001* 1.3B (FeedME)
- *text-curie-001* 6.7B (FeedME)
- *text-davinci-001* 175B (FeedME)

code (Jul/2021)

- Codex 12B
  code-cushman-001
- Codex 175B
  code-davinci-001

pretrain + cpt (Mar/2022)

- GPT-3 1.3B pretrain
- GPT-3 2.7B pretrain
- GPT-3 6.7B pretrain
- GPT-3 unsupervised cpt-text 1.2B

insert + edit (Mar/2022)

- *text-davinci-insert-001*
- *text-davinci-insert-002*
- *text-davinci-edit-001*
- *code-davinci-edit-001*

GPT-3.5 (2022-2023)

- **Codex 175B (no instruct)**
  code-davinci-002

- *text-davinci-002* 175B (FeedME)
- ***text-davinci-003* 175B (PPO)**
- **ChatGPT 175B (PPO)**
  gpt-3.5-turbo
- Microsoft Bing Chat 175B (Proprietary, GPT-4?)

➤ Miscellaneous API
1. *cushman:2020-05-03*
2. *ada:2020-05-03*
3. *babbage:2020-05-03*
4. *curie:2020-05-03*
5. *davinci:2020-05-03*

6. *if-curie-v2*
7. *if-davinci-v2*
8. *if-davinci:3.0.0*
9. *davinci-if:3.0.0*

10. *davinci-instruct-beta:2.0.0* (SFT)

11. *text-ada:001*
12. *text-babbage:001*
13. *text-curie:001*
14. *text-davinci:001*

15. *audio-transcribe-deprecated*

16. *text-chat-davinci-002-20221122*
17. *gpt-3.5-turbo-0301*

Total models shown in this viz
= **64**

Not to scale. Selected highlights only. Alan D. Thompson. March 2023. https://lifearchitect.ai/gpt-3 Sources: OpenAI 1, 2 and papers, API duplicates removed.

🔗 LifeArchitect.ai/gpt-3

What would it mean for you to deploy AI tools in your institution?

Do you already have a plane?

What will be most efficient to start with?

Teachers/Researchers education?

Management & Administration?

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Thanks

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