Bringing new AI into old workflows

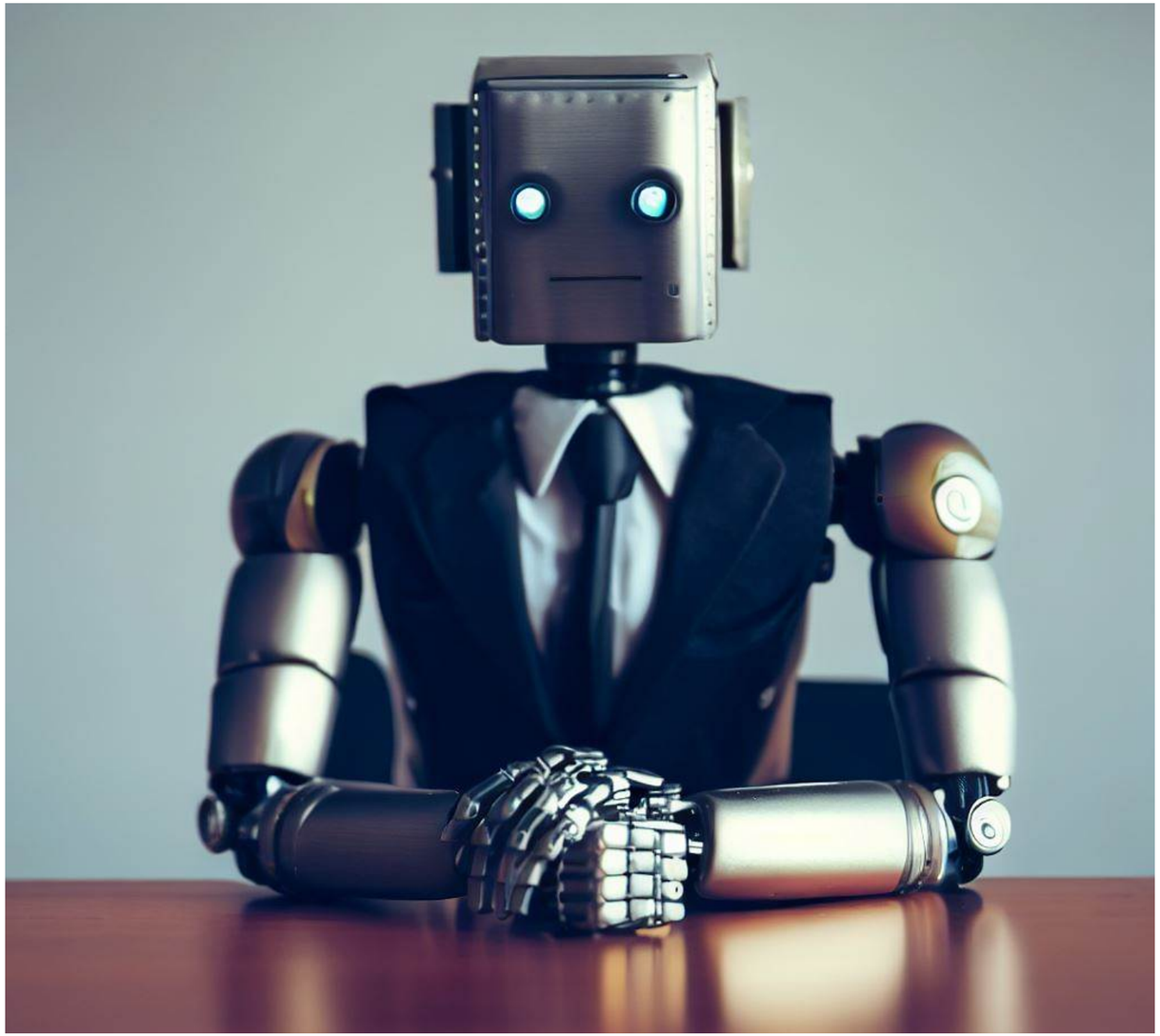
GENERATIVE AI CONCEPTS



Daniel Tedesco
Data Lead, Google

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Meeting our "replacement"



Advantages and limitations

Advantages

- Knowledge of trained fields
- Very fast
- Inexpensive

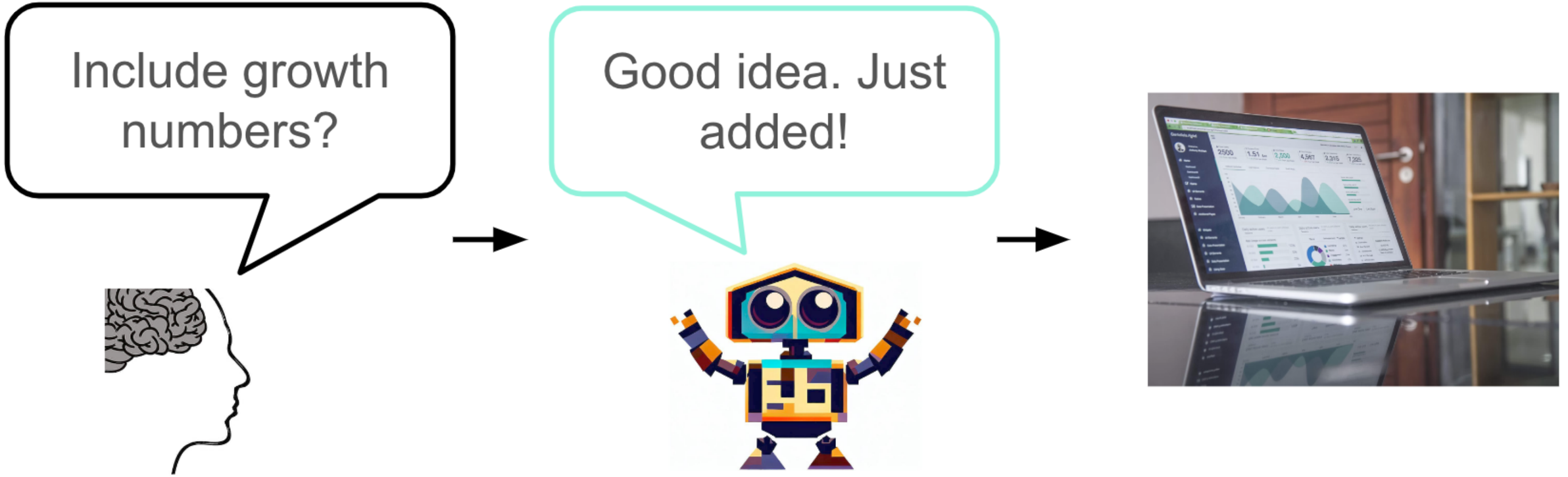
Limitations

- Hallucination and potential bias
- No common sense
- Implementation challenges

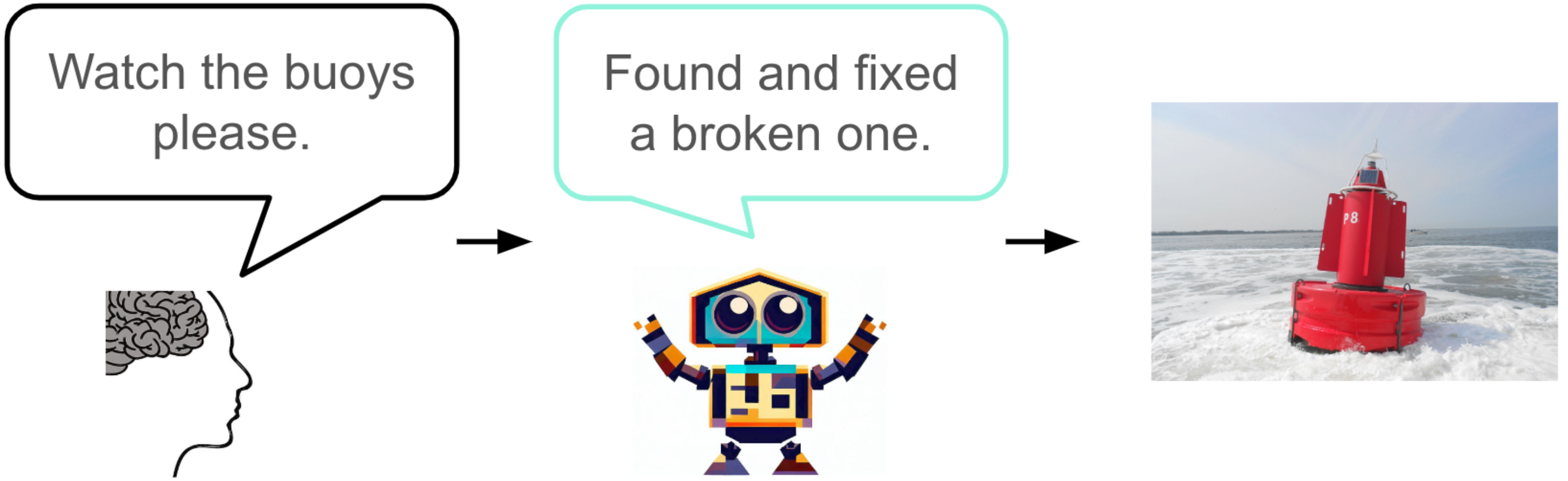
Augmentation



Co-creation



Replacement



A novel implementation

- **Augmentation:** AI suggests edits, human decides
- **Co-creation:** AI and human collaboratively write a novel
- **Replacement:** AI generates and publishes social media posts

Identify opportunity

Identify

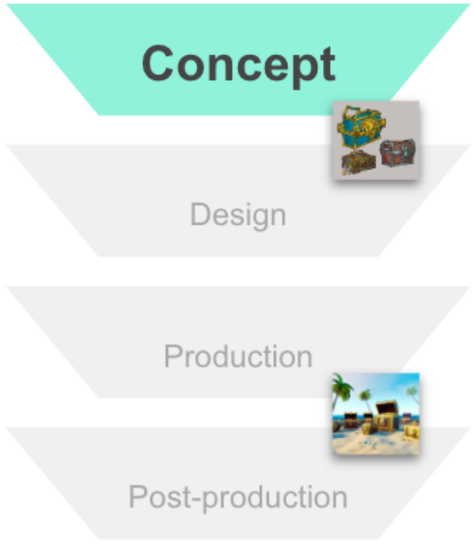


Decompose the process

Identify



Decompose

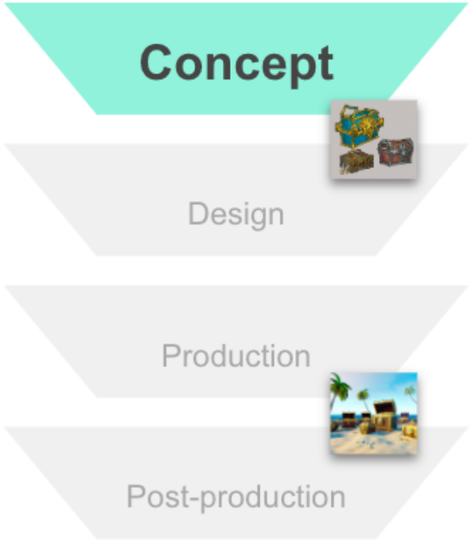


Test an AI solution

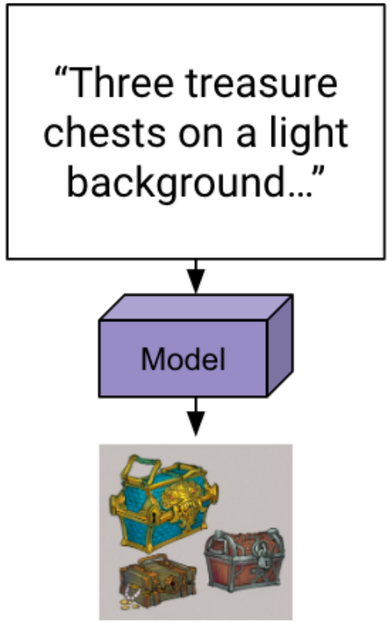
Identify



Decompose



Test

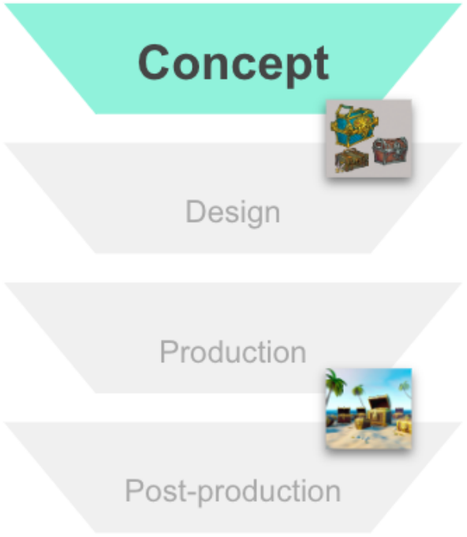


Scale up

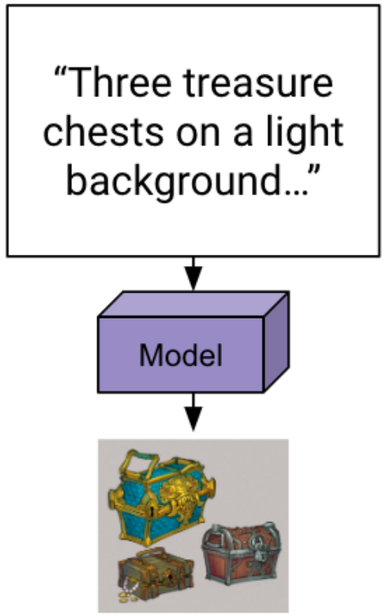
Identify



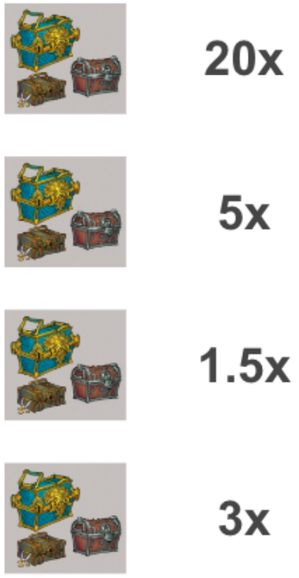
Decompose



Test



Implement & Monitor



A new way of working

- Treat AI as partners rather than competitors
- Prepare for lifelong learning, with AI support
- Be patient with integration



Let's practice!

GENERATIVE AI CONCEPTS

Progress in generative AI

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Daniel Tedesco
Data Lead, Google

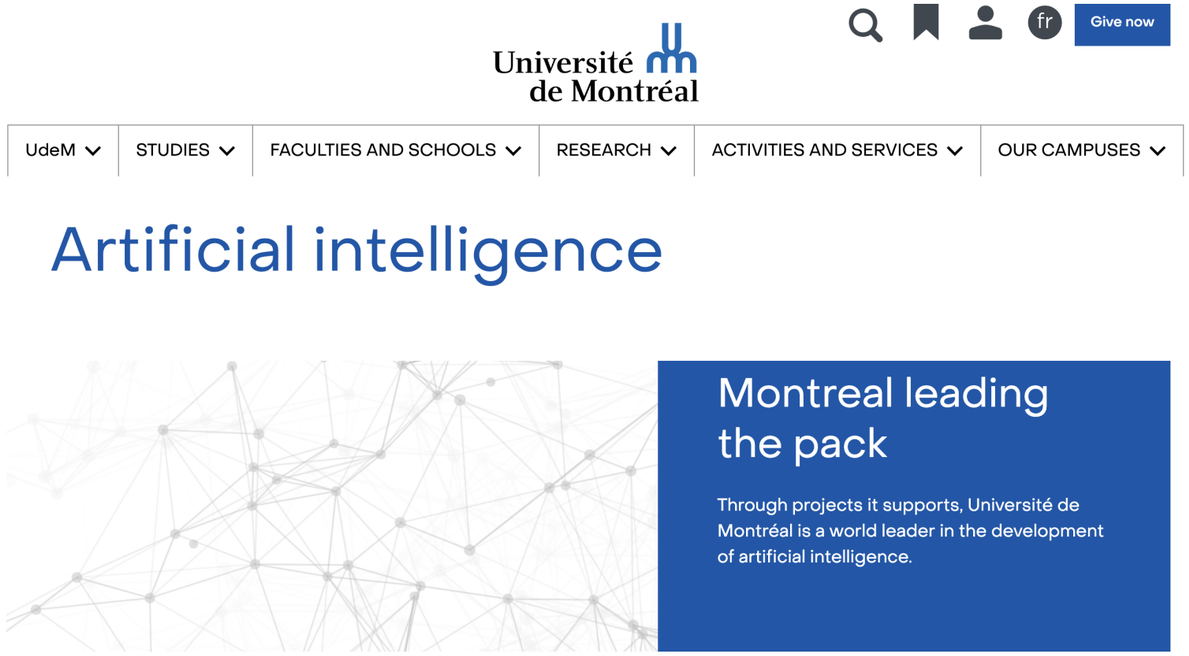
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A collaborative effort

- Universities
- Governments and civic organizations
- Open-source communities
- Startups and large companies

Universities

- New research, such as invention of GANs
- New researchers
- Partnerships with other sectors



[1] University of Montreal website

Governments and civic organizations

Governments

- Establish and enforce regulatory environment
- Fund basic research

Civic institutions

- Provide independent analyses
- Resources, such as datasets
- Project funding



[1] National Defense Magazine, https://www.nationaldefensemagazine.org/articles/2016/5/11/darpa-shows-off-technology-at-demo-day

Open-source communities

- Provide open access to tools and models
- Lower barriers to entry, experimentation, and sharing
- Are difficult to sustain and maintain quality
- Raise risks of misuse

Some generative AI Open-source projects













Startups and large companies

- Seek competitive advantage
- Bring generative AI to broad adoption
- Showcase advances to attract talent and impress investors

Large companies additionally:

- Fund research, such as introduction of transformers by Google
- Acquire startups
- Offer hardware and cloud resources

The openness challenge

Pros

- Developer support
- Talent attraction
- Broader feedback

Cons

- Lose competitive advantage
- Risk liability for misuse

The boundaries of generative AI development

Accelerators

- Decreasing hardware costs
- Research developments
- Competitive and geopolitical pressures

Decelerators

- Technological limits
- Overbearing regulation
- Closed ecosystems
- Limited economic resources

Let's practice!

GENERATIVE AI CONCEPTS

Preparing for a future of generative AI

GENERATIVE AI CONCEPTS



Daniel Tedesco
Data Lead, Google

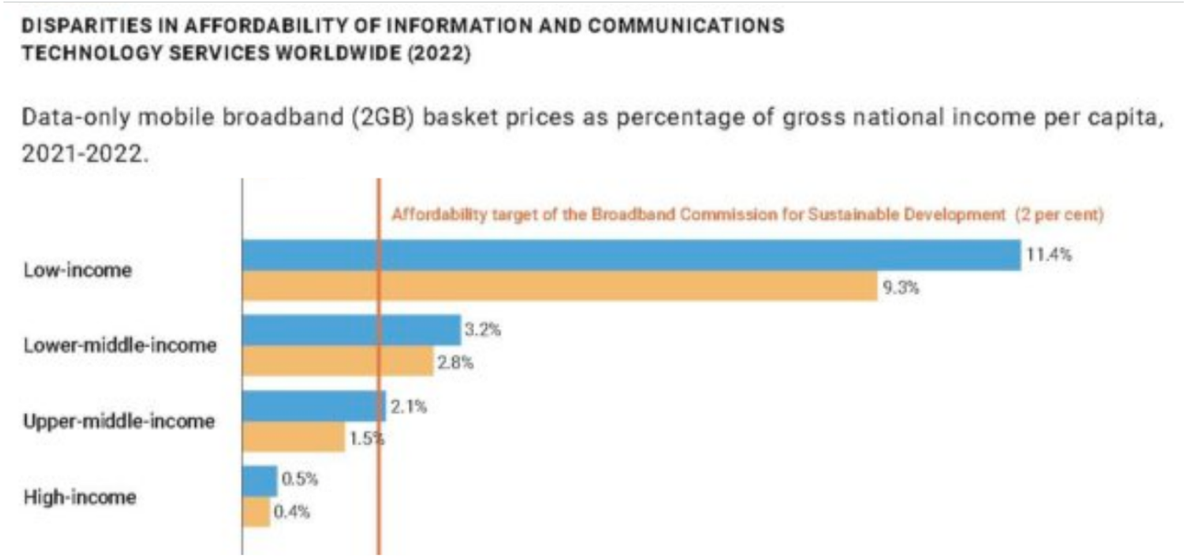
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Do more with less

- Individuals become teams
- Small teams create big things
- Bureaucracies become more streamlined

The AI divide

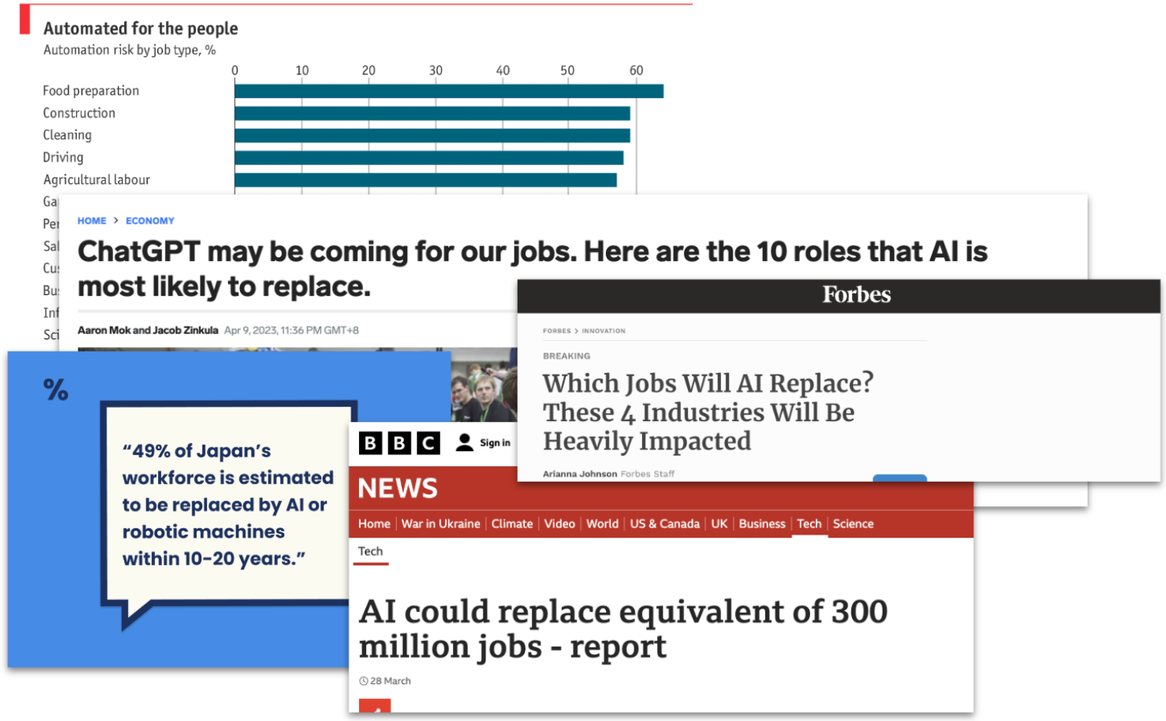
- **Access:** availability, cost
- **Literacy:** mindset, capability



[1] International Telecommunications Union, 2023

Education and jobs

- Replacement, augmentation, and co-creation, too
- Reshape around generative AI
  - In education: access to AI, move away from memorization
  - In the workplace: support from AI partner
- Difficult transition



[1] Various headlines from BBC, The Economist, Forbes, Business Insider, and Gitnux

Media and entertainment

- Creative explosion
- Personalized media
- Requires new forms of trust

Which is real and which is AI-generated?



[1] https://www.reddit.com/r/midjourney/comments/12uij2l/one_is_a_real_photo_and_one_is_ai_generated_can/

Science and technological progress

- Faster discoveries
- Faster technology transfer
- Human direction still needed



[1] Deepmind website, https://www.deepmind.com/research/highlighted-research/alphafold

Values: do they think and feel like us?



Let's practice!

GENERATIVE AI CONCEPTS

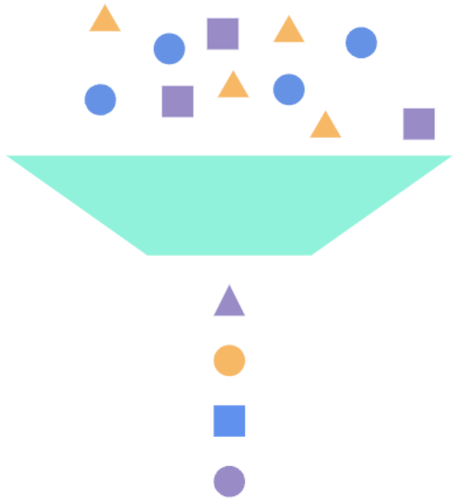
You made it!

GENERATIVE AI CONCEPTS

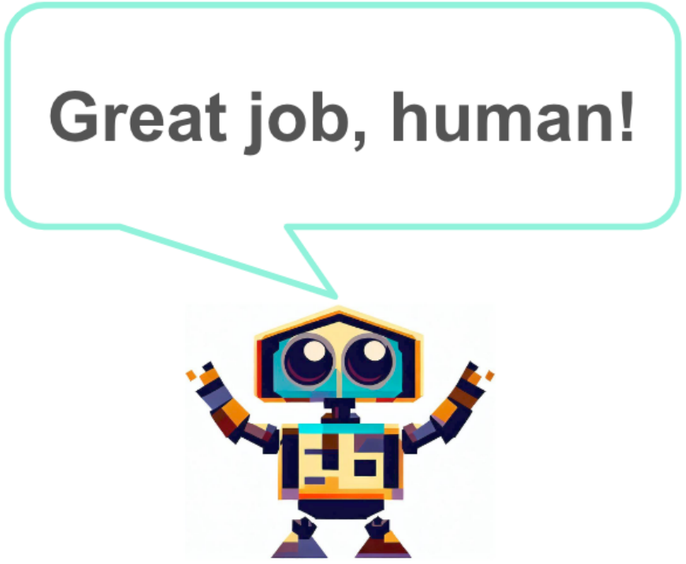


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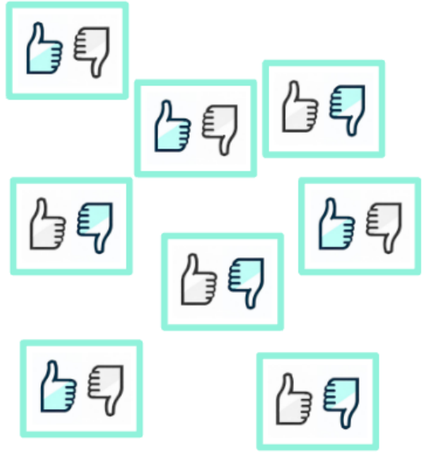
Congratulations



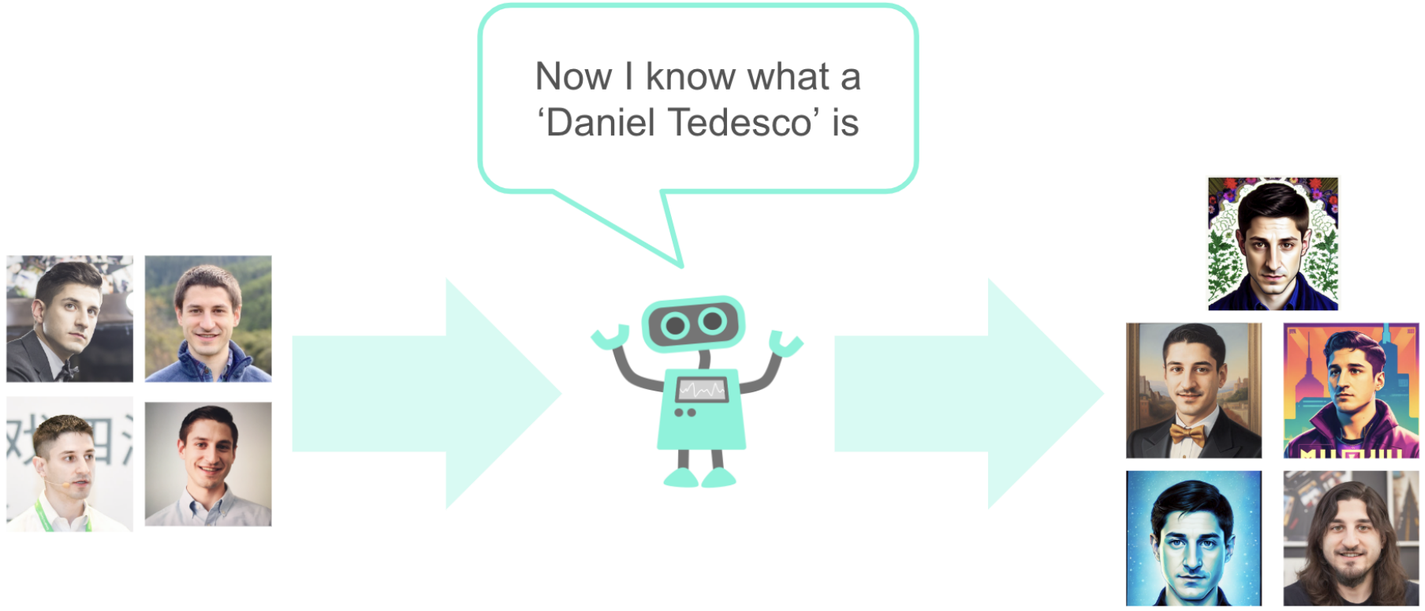








Four chapters of fun



- Chapter 1: Got to know generative AI
- Chapter 2: Learned how these models are developed
- Chapter 3: How to use generative AI and its content responsibly
- Chapter 4: Got ourselves ready for the Age of Generative AI

The learning just started

- Explore more DataCamp courses:
  - **Introduction to ChatGPT**
  - **Large Language Models (LLMs) Concepts**
- Experiment with generative AI in your own workflows
- Stay up to date by following topical sources:
  - DataCamp's **DataFramed Podcast**
  - My podcast: **www.youtube.com/@thecraftpodcast** and Twitter @dtedesco1

Congratulations!

GENERATIVE AI CONCEPTS