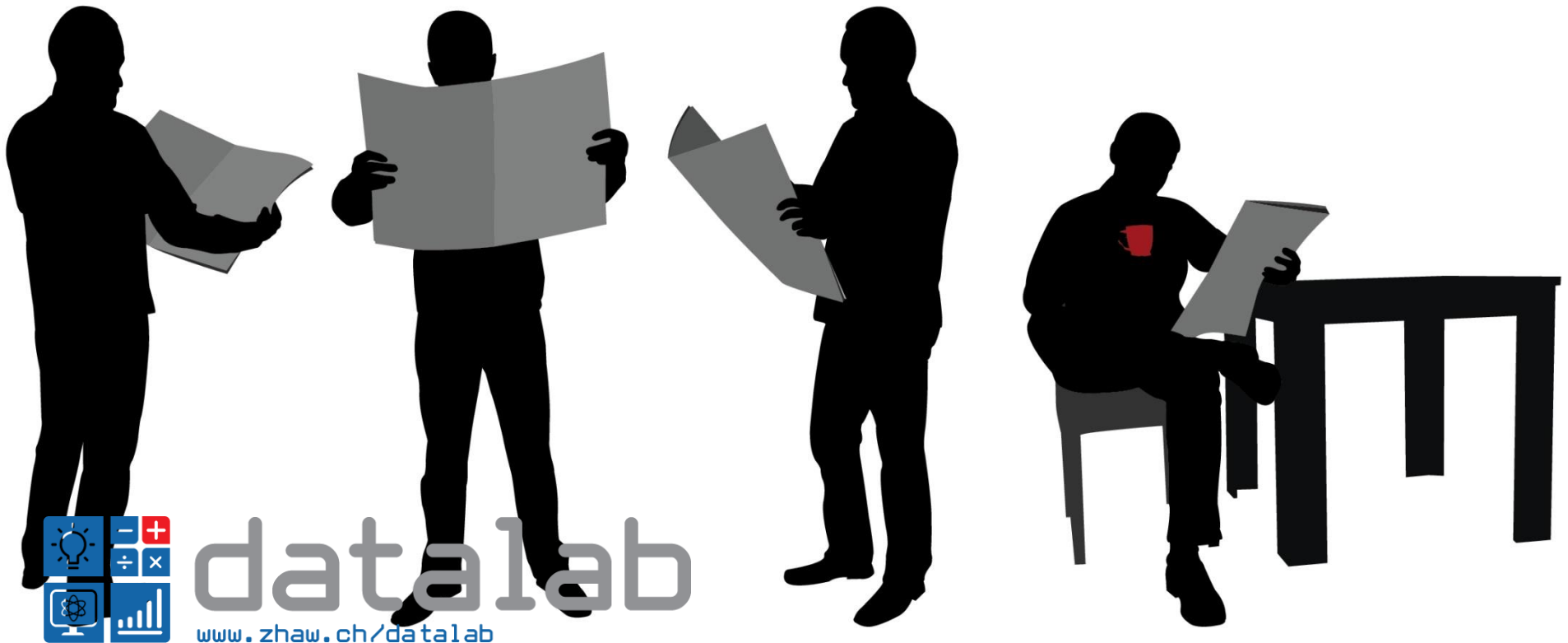


# The Relationship of Pattern Recognition Research and Public Communication

Discussion opener at Algorithms + Language, IAM MediaLab, Oct 17 2019

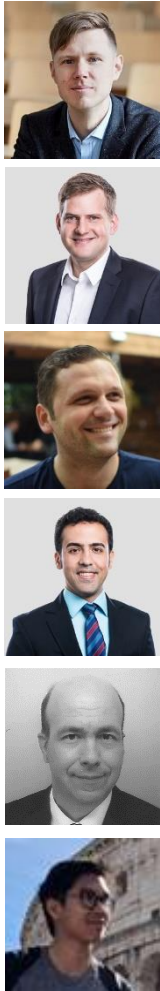
*by Thilo Stadelmann*



# AI/ML @ Information Engineering Group

Institute of Applied Information Technology, ZHAW School of Engineering

## Machine learning-based Pattern Recognition

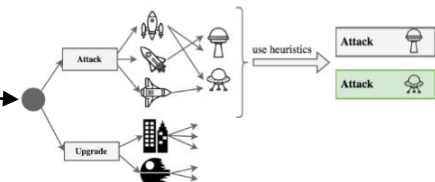
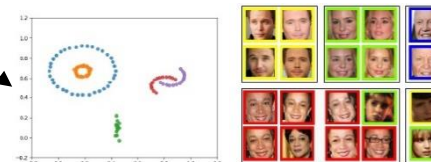
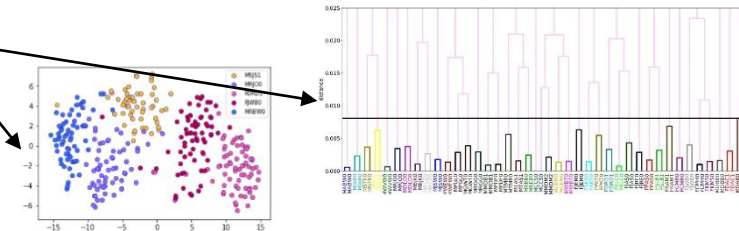
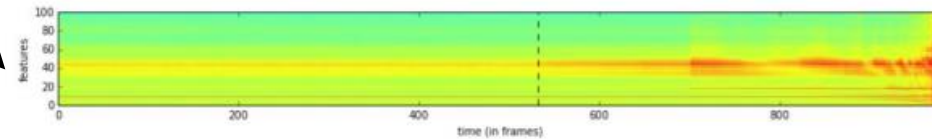
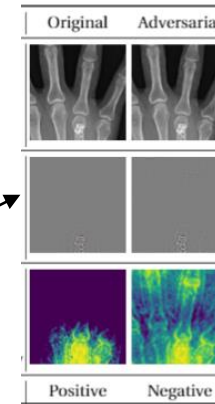


Robust Deep Learning

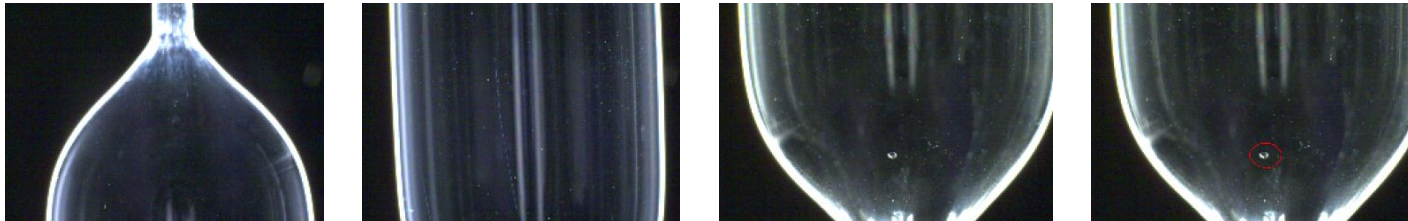
Voice Recognition

Document Analysis

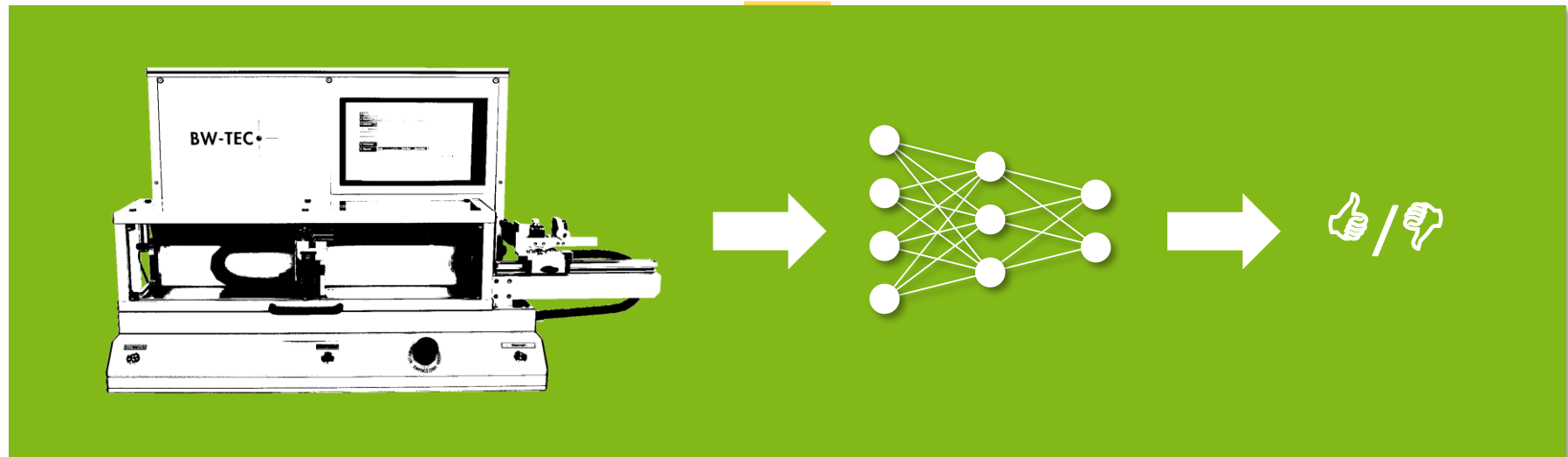
Learning to Learn & Control



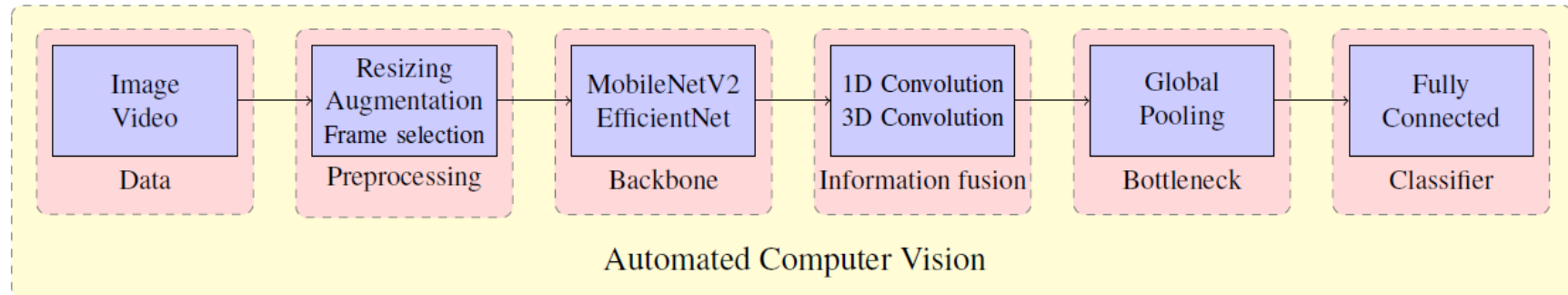
# Example 1: Industrial quality control



# Example 1: Industrial quality control



# Example 2: AutoML (Auto Computer Vision 2 Challenge)

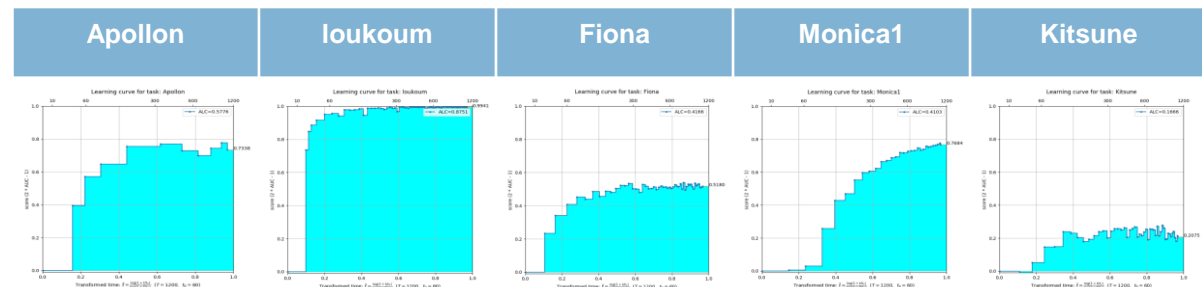


## Image Processing:

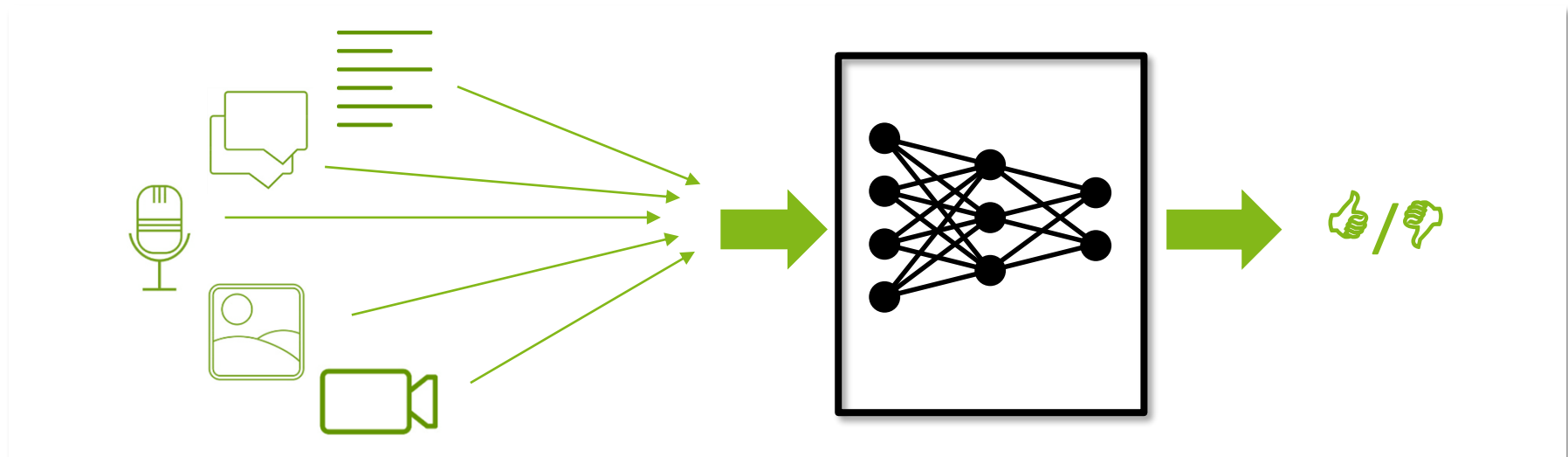
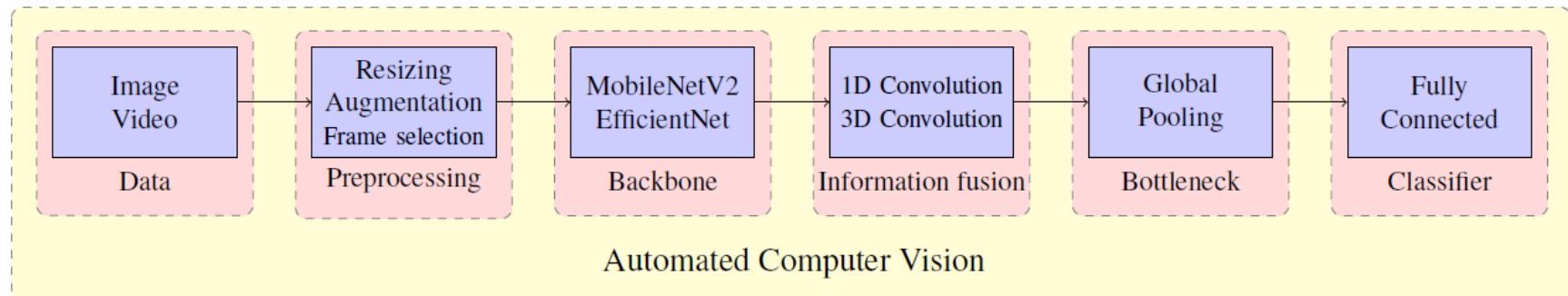
- Resize to the larger edge of 128
- Global (spatial) average pooling

## Video Processing:

- Random frame selection
- Resize to 80×80 for large images
- Temporal convolution



## Example 2: AutoML (Auto Computer Vision 2 Challenge)



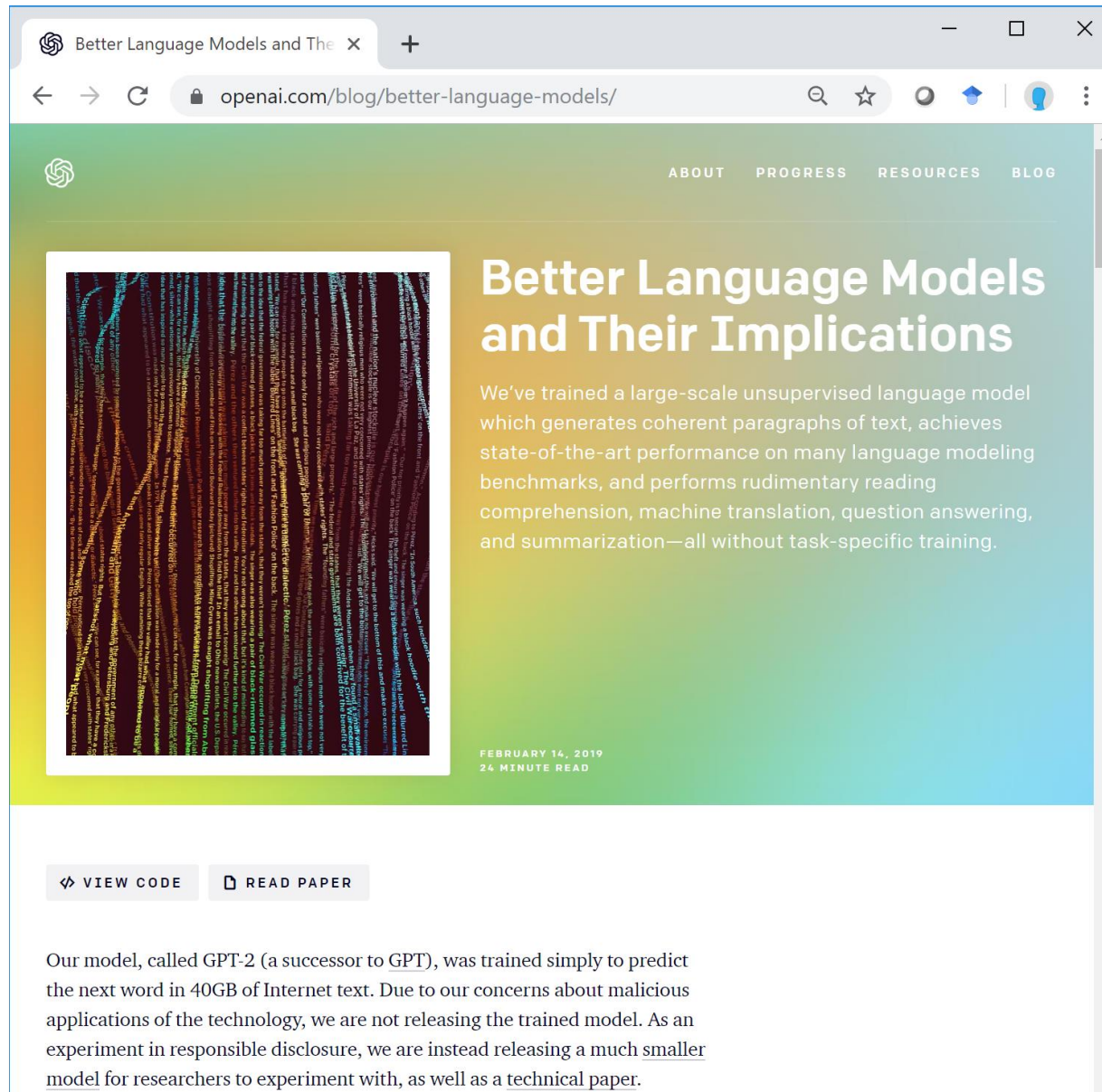
# Public communication: an indirect problem in PR (at least)

Challenge: how **not** to exaggerate expectation when using terms like *intelligence*, *learning* etc. together with high-tech and the goal to “be heard”?





# A more explicit problem of PR and com:



The screenshot shows a web browser window with the OpenAI blog post titled "Better Language Models and Their Implications". The browser's address bar shows the URL "openai.com/blog/better-language-models/". The page features a header with navigation links: ABOUT, PROGRESS, RESOURCES, and BLOG. The main content area has a green background with a large image on the left showing a close-up of a book's pages with text. The article title "Better Language Models and Their Implications" is prominently displayed in white. Below the title, a summary paragraph states: "We've trained a large-scale unsupervised language model which generates coherent paragraphs of text, achieves state-of-the-art performance on many language modeling benchmarks, and performs rudimentary reading comprehension, machine translation, question answering, and summarization—all without task-specific training." The date "FEBRUARY 14, 2019" and "24 MINUTE READ" are shown below the summary. At the bottom of the article, there are two buttons: "VIEW CODE" and "READ PAPER". Below these buttons, the text reads: "Our model, called GPT-2 (a successor to GPT), was trained simply to predict the next word in 40GB of Internet text. Due to our concerns about malicious applications of the technology, we are not releasing the trained model. As an experiment in responsible disclosure, we are instead releasing a much smaller model for researchers to experiment with, as well as a technical paper."

Better Language Models and Their Implications

We've trained a large-scale unsupervised language model which generates coherent paragraphs of text, achieves state-of-the-art performance on many language modeling benchmarks, and performs rudimentary reading comprehension, machine translation, question answering, and summarization—all without task-specific training.

FEBRUARY 14, 2019  
24 MINUTE READ

VIEW CODE READ PAPER

Our model, called GPT-2 (a successor to GPT), was trained simply to predict the next word in 40GB of Internet text. Due to our concerns about malicious applications of the technology, we are not releasing the trained model. As an experiment in responsible disclosure, we are instead releasing a much smaller model for researchers to experiment with, as well as a technical paper.



# Discussion starters on the relationship of pattern recognition & communications

- **Implicit relation:** pattern recognition research creates a lot of amazing results  
→ communicating them to a general public without creating **hype** is hard
- **Explicit relation:** machine-based language models recently reached production strength  
→ how do **strong language models** affect communication (fake comments etc.)?



## On me:

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- Collaboration: [datalab@zhaw.ch](mailto:datalab@zhaw.ch)

→ Happy to answer questions & requests.

