GERALD R. FORD SCHOOL
OF PUBLIC POLICY
UNIVERSITY OF MICHIGAN

AI For Local Governments & Municipalities

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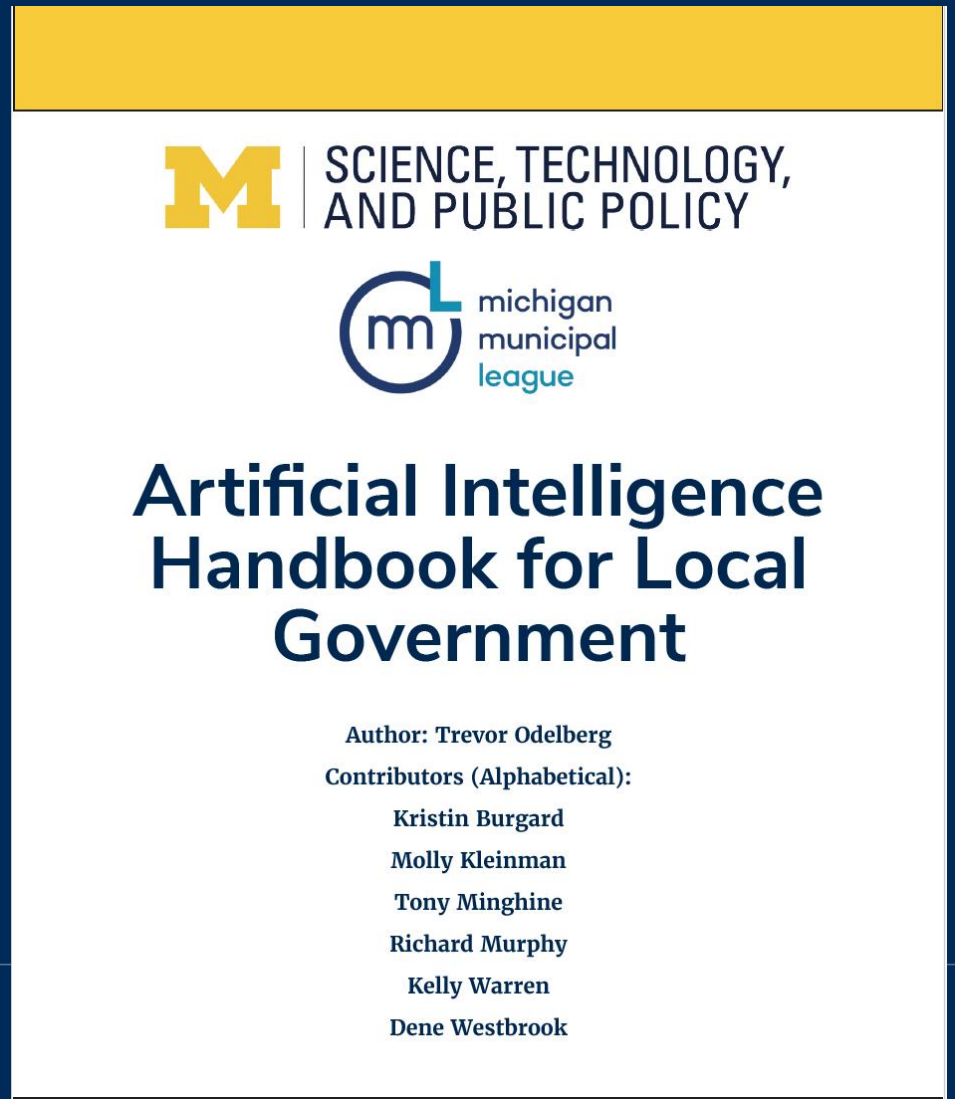
What is the Science, Technology, & Public Policy Program?

- Research center based in the Ford School of Public Policy
- Educational, research, and community & policy engagement elements
- Affiliated UM faculty from sciences, engineering, and professional schools.
- Science & technology broadly defined, everything from AI to space to biotech to climate change



Outline

- Understanding AI
- Concerns and risks
- How municipalities are successfully using AI
- Principles for municipal AI assessment

Understanding AI

What is AI?

National Artificial Intelligence Initiative Act of 2020:

The term "artificial intelligence" means a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations or decisions influencing real or virtual environments. Artificial intelligence systems use machine and human-based inputs to-

(A) perceive real and virtual environments;

(B) abstract such perceptions into models through analysis in an automated manner; and

(C) use model inference to formulate options for information or action.

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What is AI? continued

Blueprint for an AI Bill of Rights (2022):

(1) Automated systems that (2) have the potential to meaningfully impact the American public's rights, opportunities, or access to critical resources or services.

What is AI? continued

Alondra Nelson, former acting director of the White House Office of Science and Technology Policy:

AI is a tool. It’s math, statistics, software, hardware.

Common types of AI in use right now

- Generative AI (e.g. ChatGPT, Copilot)
- Recommender systems (e.g. Netflix's "if you liked The Price is Right, you might like Jeopardy!")
- Predictive tools (e.g. lender risk algorithms)
- Pattern matching (e.g. facial recognition)
- Combinations of the above (e.g. autonomous vehicles)

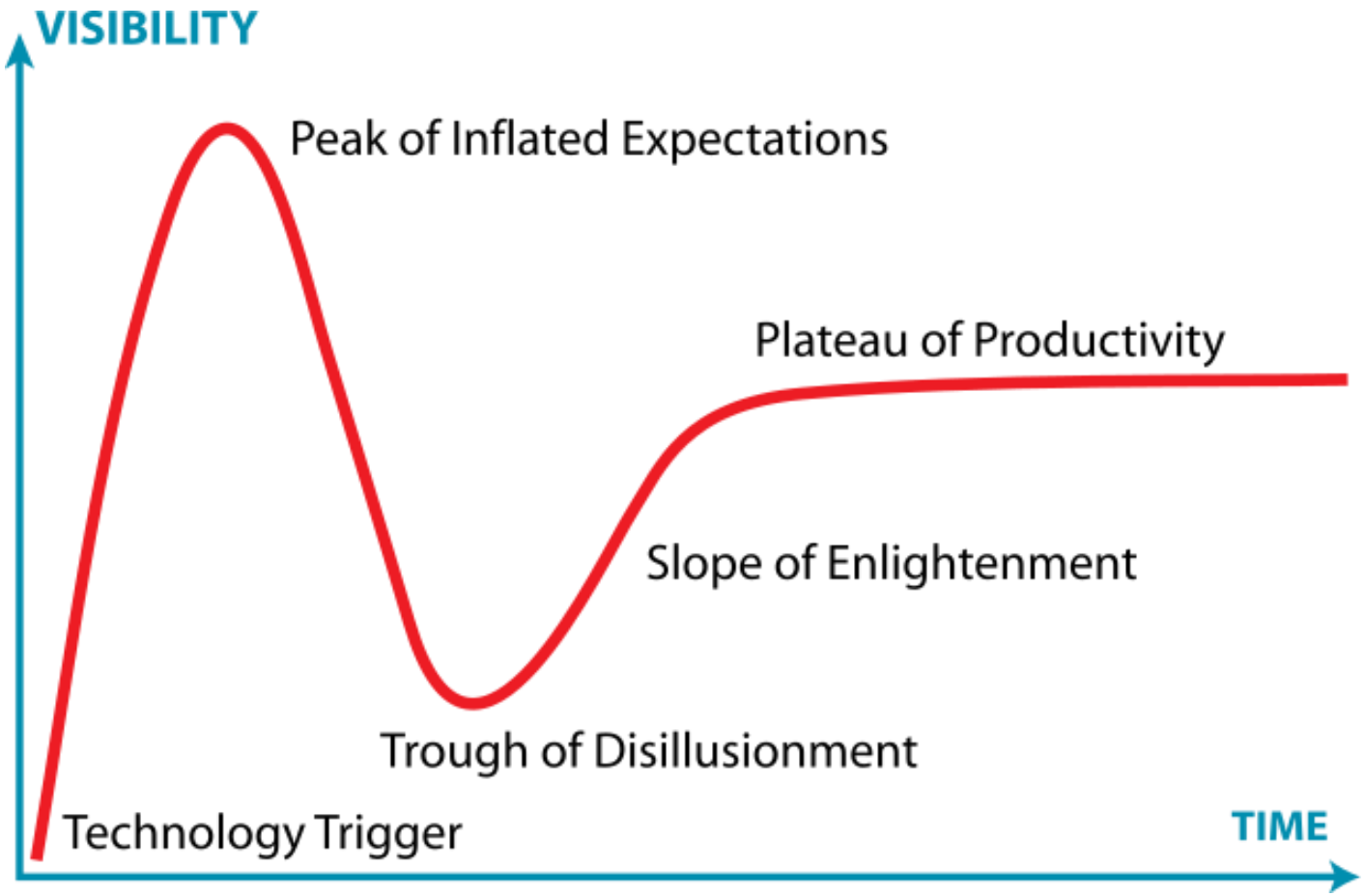
Generative AI

Programs trained on very large quantities of text or images, generative AI functions similarly to advanced chatbots, quickly generating realistic text and images from user input, questions, or prompts. The math underlying generative AI is called “large language models,” or LLMs.

Machine learning

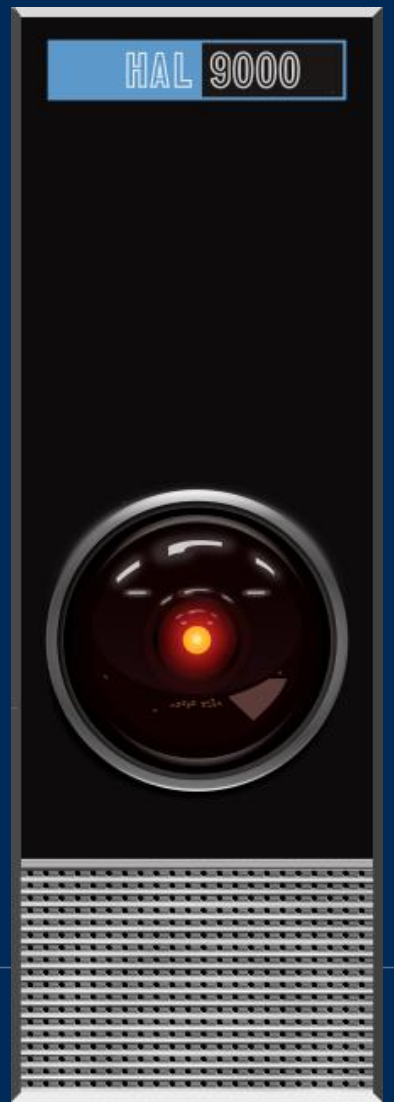
A subset of AI that uses algorithms to identify patterns in data to make predictions. These algorithms are widely used in most AI software. Instead of being explicitly programmed, machine learning algorithms analyze large amounts of “training data” to “learn” trends and make informed predictions.

Gartner Hype Cycle



What the AI we are talking about these days is not...

- Intelligent
- Original
- Self aware



Concerns and Risks

Areas of concern

- Civil rights
- Privacy
- Transparency
- Intellectual property
- Environmental & resource management
- Labor
- Misinformation
- Accuracy
- Accountability

Civil Rights

Risk Assessments Biased Against African Americans, Study Finds

Privacy

DECEMBER 1, 2023 REPORT

Editors' notes

Trick prompts ChatGPT to leak private data

by Peter Grad , Tech Xplore

Transparency

Nearly 90% of Consumers Want Transparency on AI Images finds Getty Images Report

Environmental impacts and resource consumption


FORBES > INNOVATION > AI

AI Is Accelerating the Loss of Our Scarcest Natural Resource: Water

Disinformation and scams

AI fakes raise election risks as lawmakers and tech companies scramble to catch up

FEBRUARY 8, 2024 · 5:00 AM ET

Accountability

U.S. NEWS

NYC’s AI chatbot was caught telling businesses to break the law. The city isn’t taking it down

How municipalities are successfully using AI

Advanced Chatbots

- Use generative AI
- Able to interpret a range of questions and answers
- Can be trained on information specific to a particular jurisdiction
- Example: Buenos Aires
  - Integrated into WhatsApp, answers over 5 million questions monthly city has used it to communicate information on topics including social care, vaccinations, and bike sharing.

Transcription & Translation

- Real-time transcription can improve accessibility of public meetings for people with disabilities
- Translation tools, including the widely available Google Translate, can help cities reach people and communities that speak languages other than English
- Example: San Jose, CA
  - Uses an audio transcription program that also provides translation in order to make city council meetings more accessible.

Road & Traffic Management

- Predictive tools to prioritize road maintenance decisions
- Optimizing things like bus routes and signal timing
- Collecting speeding and red light violation data to identify enforcement or traffic calming targets
- Example: Chattanooga, TN
  - An AI traffic management project funded by the U.S. Department of Energy, resulted in a 32% reduction in motor vehicle delays on the targeted route.

Disaster Preparedness & Management

- Use a variety of inputs including satellite imagery, physical sensors, and historical data
- Can aid in identifying high risk locations, and determining risks from specific disasters such as heavy winds, tornados, flooding, fires, and power outages.
- Example: Virginia Beach, VA
  - Virginia Beach has implemented FloodVISION-AI, which employs AI and internet-connected sensors to monitor areas with flood risks and respond more quickly to emergencies .

Principles for Municipal AI Assessment

1) The use of AI should support our work to deliver better, safer, more efficient, and equitable services to our residents.

2) Every tool that we use has an impact on the security, privacy, and digital rights of our constituents.

3) Everything we do, regardless of the tools, is a reflection of ourselves. We have a responsibility not to discriminate based on race, ethnicity, sex, religion, age, disability, veteran status, or other classifications. This responsibility extends to our use of AI.

4) We will properly disclose and be transparent to the public about our use of AI tools and their impacts.

5) We embrace a culture of responsible experimentation where we maintain control and understanding of the use of new tools in service to our residents.

Final takeaway: Start with policy

- Adopting a municipality-wide local AI policy is critical to encourage experimentation and mitigate risk.

- Making flexible guidelines that can be updated frequently can help cities keep up with AI advancements.

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Thank you!