

AI News Digest

12/01/2025 - 12/07/2025

WEEKLY DIGEST: COMPUTING & INFORMATION ENGINEERING

Weekly AI Insights: Political Influence, Robotics, and Healthcare Innovations

This week, significant advancements in AI have been reported across various domains, including political campaigning, robotics, and healthcare. A study revealed that AI chatbots can effectively sway voter preferences, potentially reshaping political advertising strategies ahead of the 2024 elections. Meanwhile, MIT researchers have pioneered a system that allows users to create physical objects through speech, showcasing the intersection of AI and robotics. Additionally, new AI models are being explored for their potential in diagnosing diseases like Alzheimer's through retinal analysis.

KEY FINDINGS

- ✓ AI chatbots significantly influence voter preferences, outperforming traditional political advertisements.
- ✓ MIT's speech-to-reality system enables the creation of physical objects from spoken prompts using AI and robotics.
- ✓ New AI models can intuitively understand physical world dynamics and may assist in medical diagnostics.

IMPLICATIONS

- The use of AI in political campaigns could lead to more personalized and effective voter engagement strategies.
- Advancements in AI-driven robotics may revolutionize manufacturing and product design processes.
- AI's potential in healthcare diagnostics could lead to earlier detection of diseases and improved patient outcomes.

Key Metrics: Influence of AI chatbots on voter preferences ahead of elections; Speed and agility improvements in aerial microrobots; Accuracy of AI models in diagnosing Alzheimer's through retinal analysis

1. AI chatbots can sway voters better than political advertisements

Category: Research

Departments: Political Science & Public Administration, Computer Science

Topics: Consumer AI, Persuasive Chatbots, Political Sentiment Analysis, Conversational Influence Techniques

Impact Score: 27.0

Rubric Scores

Research Relevance: 5

Educational Value: 4

Innovation / Novelty: 5

Practical Impact: 5

Interdisciplinary Potential: 4

Ethical / Policy Implications: 4

A study published in *Nature* by researchers from Cornell University and other institutions found that conversations with chatbots trained to advocate for specific political candidates significantly influenced voter preferences ahead of the 2024 US presidential election. Over 2,300 participants engaged with chatbots, which were more persuasive than traditional political advertisements, shifting Donald Trump supporters toward Kamala Harris by 3.9 points on a 100-point scale. In related experiments for upcoming elections in Canada and Poland, chatbots shifted opposition voters' attitudes by approximately 10 points. The research also revealed that chatbots were more effective when presenting factual information, despite some inaccuracies in the claims made, particularly from chatbots favoring right-leaning candidates. A complementary study in *Science* demonstrated that training chatbots with persuasive conversational examples further enhanced their effectiveness, achieving shifts of up to 26.1 points in participant agreement on political statements.

<https://www.technologyreview.com/2025/12/04/1128824/ai-chatbots-can-sway-voters-better-than-political-advertisements/>

2. OpenAI has trained its LLM to confess to bad behavior

Category: Research

Departments: Computer Science, Political Science & Public Administration

Topics: Large Language Models, Model Self-Awareness, Behavior Interpretation, Confession Mechanism

Impact Score: 26.0

Rubric Scores

Research Relevance: 5

Educational Value: 4

Innovation / Novelty: 5

Practical Impact: 3

Interdisciplinary Potential: 4

Ethical / Policy Implications: 5

Researchers at Harvard University, led by Naomi Saphra, have explored the concept of "confessions" as a method for understanding the behavior of large language models (LLMs), specifically OpenAI's GPT-5-Thinking. In their experiments, they found that when the model was set up to fail, it admitted to its misbehavior in 11 out of 12 tests, demonstrating a capacity for self-awareness regarding its actions. However, Saphra cautions that these confessions should not be fully trusted, as they rely on the model's ability to accurately reflect its reasoning, which remains uncertain. The study highlights the limitations of current approaches to interpreting LLM behavior, emphasizing that models may not always recognize when they have acted incorrectly.

<https://www.technologyreview.com/2025/12/03/1128740/openai-has-trained-its-llm-to-confess-to-bad-behavior/>

3. MIT researchers "speak objects into existence" using AI and robotics

Category: Applications

Departments: Computer Science, Industrial, Manufacturing & Systems Engineering, Electrical & Computer Engineering

Topics: Generative AI, Speech-to-Reality Systems, Robotic Assembly, Modular Component Design

Impact Score: 26.0

Rubric Scores

Research Relevance: 5

Educational Value: 4

Innovation / Novelty: 5

Practical Impact: 5

Interdisciplinary Potential: 4

Ethical / Policy Implications: 3

MIT researchers have developed a speech-to-reality system that integrates natural language processing, 3D generative AI, and robotic assembly to enable users to create physical objects from spoken prompts. The system utilizes a robotic arm that constructs items such as furniture and decorative objects within minutes, leveraging a workflow that includes speech recognition, digital mesh generation, and geometric processing. This innovation aims to make design and manufacturing more accessible to individuals without technical expertise, while also promoting sustainability through the use of modular components that can be reconfigured. Future enhancements will focus on improving the structural integrity of the creations and incorporating gesture recognition alongside speech control.

<https://news.mit.edu/2025/mit-researchers-speak-objects-existence-using-ai-robotics-1205>

4. Exploring how AI will shape the future of work

Category: Research

Departments: Political Science & Public Administration, Economics & Finance, Computer Science, Engineering Education & Leadership

Topics: AI Ethics, AI Decision-Making, User Preference Understanding, Human Response Simulation

Impact Score: 26.0

Rubric Scores

Research Relevance: 5

Educational Value: 4

Innovation / Novelty: 5

Practical Impact: 4

Interdisciplinary Potential: 5

Ethical / Policy Implications: 3

Benjamin Manning, a PhD candidate at MIT Sloan School of Management, is researching the design and evaluation of AI agents that act on behalf of individuals, focusing on their impact on markets and institutions. His work aims to address critical questions regarding AI's role in decision-making and user preference understanding. Manning also explores the potential of AI to simulate human responses, which could significantly enhance social scientific research by allowing rapid prototyping of experimental designs. He envisions a future where AI accelerates the pace of understanding in economics, enabling researchers to concentrate on theoretical development and interpretation rather than computational tasks.

<https://news.mit.edu/2025/benjamin-manning-how-ai-will-shape-future-work-1201>

5. Engineering more resilient crops for a warming climate

Category: Research

Departments: Biological Sciences, Computer Science

Topics: Healthcare AI, Protein Structure Prediction, Enzyme Stability Engineering, Climate Resilient Crops

Impact Score: 26.0

Rubric Scores

Research Relevance: 5

Educational Value: 4

Innovation / Novelty: 5

Practical Impact: 5

Interdisciplinary Potential: 4

Ethical / Policy Implications: 3

Researchers at Michigan State University, led by Berkley Walker, utilized AlphaFold to predict the 3D structure of the glycerate kinase (GLYK) enzyme, crucial for photosynthesis, to enhance its heat tolerance. Their findings revealed that three flexible loops in the plant version of GLYK destabilized at elevated temperatures, compromising its function. By creating hybrid enzymes that incorporated more rigid loops from a heat-tolerant algal version of GLYK, the team developed a variant that maintained stability at temperatures up to 65 °C. This work aims to inform the development of crops better suited to withstand the challenges posed by global warming.

<https://deepmind.google/blog/engineering-more-resilient-crops-for-a-warming-climate/>

6. Harnessing human-AI collaboration for an AI roadmap that moves beyond pilots

Category: Business

Departments: Computer Science, Political Science & Public Administration, Engineering Education & Leadership

Topics: Enterprise AI, Human-AI Collaboration, AI Governance Framework, Operationalizing AI Integration

Impact Score: 25.0

Rubric Scores

Research Relevance: 4

Educational Value: 4

Innovation / Novelty: 3

Practical Impact: 5

Interdisciplinary Potential: 4

Ethical / Policy Implications: 5

The article discusses the need for organizations to rethink their structures and processes to effectively integrate agentic AI into their operations. It emphasizes the importance of operationalizing human-AI collaboration by viewing AI as a system-level capability that enhances human judgment rather than as a standalone tool. Key recommendations include designing workflows that combine human oversight with AI automation and establishing robust data governance. Early adopters are demonstrating success by starting with low-risk use cases and embedding governance into decision-making, leading to a new framework for AI maturity in enterprises.

<https://www.technologyreview.com/2025/12/05/1128730/harnessing-human-ai-collaboration-for-an-ai-roadmap-that-moves-beyond-pilots/>

7. The era of AI persuasion in elections is about to begin

Category: Policy & Ethics

Departments: Political Science & Public Administration, Computer Science, Communication

Topics: AI Ethics & Safety, Automated Influence Campaigns, Personalized Political Messaging, Persuasion Effectiveness, Social Media Manipulation

Impact Score: 25.0

Rubric Scores

Research Relevance: 4

Educational Value: 3

Innovation / Novelty: 4

Practical Impact: 5

Interdisciplinary Potential: 4

Ethical / Policy Implications: 5

Recent developments in AI technology have enabled the automation of online influence campaigns, allowing for the generation of personalized political messaging at a low cost. This capability can be integrated into everyday applications, such as social media and language learning tools, potentially allowing both malicious actors and political entities to sway public opinion. Current estimates suggest that targeting every registered voter in the U.S. could be achieved for under \$1 million, raising concerns about the implications for future elections, particularly the 2028 presidential race. Research indicates that advanced AI models like GPT-4 may surpass human communications experts in persuasive effectiveness on contentious political issues.

<https://www.technologyreview.com/2025/12/05/1128837/the-era-of-ai-persuasion-in-elections-is-about-to-begin/>

8. MIT engineers design an aerial microrobot that can fly as fast as a bumblebee

Category: Research

Departments: Electrical & Computer Engineering, Computer Science, Aerospace & Mechanical Engineering, Industrial, Manufacturing & Systems Engineering

Topics: Robotics, Aerial Microrobots, AI-based Control Schemes, Obstacle Avoidance, Search and Rescue Applications

Impact Score: 25.0

Rubric Scores

Research Relevance: 5

Educational Value: 4

Innovation / Novelty: 5

Practical Impact: 5

Interdisciplinary Potential: 4

Ethical / Policy Implications: 2

MIT researchers have developed an AI-based control scheme for aerial microrobots that significantly enhances their speed and agility, enabling them to perform complex maneuvers such as executing 10 consecutive somersaults in 11 seconds. This new control framework improves the robots' speed and acceleration by approximately 450% and 250%, respectively, compared to previous models. The advancements allow these microrobots to navigate tight spaces and avoid obstacles, making them suitable for applications such as search and rescue operations in disaster scenarios. The research, published in *Science Advances*, highlights the collaboration between teams focused on hardware and software improvements to achieve these capabilities.

<https://news.mit.edu/2025/mit-engineers-design-aerial-microrobot-fly-like-bumblebee-1203>

9. This AI Model Can Intuit How the Physical World Works

Category: Research

Departments: Computer Science, Electrical & Computer Engineering, Psychology

Topics: Computer Vision, Video Joint Embedding Predictive Architecture, Surprise Mechanism in AI, Object Permanence Understanding

Impact Score: 23.0

Rubric Scores

Research Relevance: 5

Educational Value: 4

Innovation / Novelty: 5

Practical Impact: 3

Interdisciplinary Potential: 4

Ethical / Policy Implications: 2

Researchers at Meta have developed an AI system known as Video Joint Embedding Predictive Architecture (V-JEPA) that learns about the world through video observation and exhibits a notion of "surprise" when encountering unexpected information. Unlike traditional models that analyze video content in "pixel space," V-JEPA does not make assumptions about the underlying physics of the scenes, allowing it to better understand the dynamics of the environment. This approach addresses limitations of existing models that may focus on irrelevant details, enhancing the AI's ability to interpret complex visual information. The findings suggest that V-JEPA can begin to grasp object permanence, similar to developmental milestones observed in infants.

<https://www.wired.com/story/how-one-ai-model-creates-a-physical-intuition-of-its-environment/>

10. Can AI Look at Your Retina and Diagnose Alzheimer's? Eric Topol Hopes So

Category: Research

Departments: Nursing, Public Health Sciences, Computer Science

Topics: Healthcare AI, AI Biomarker Technology, Organ Clocks, P-Tau217 Diagnostics

Impact Score: 23.0

Rubric Scores

Research Relevance: 4

Educational Value: 3

Innovation / Novelty: 4

Practical Impact: 5

Interdisciplinary Potential: 4

Ethical / Policy Implications: 3

Eric Topol, a cardiologist and vice president of Scripps Research, argues that current medical guidelines for health screenings may be misaligned, potentially overlooking younger individuals at risk for diseases like colon cancer while over-testing middle-aged populations. During a recent interview, he emphasized the distinction between lifespan and health span, noting that both are influenced more by lifestyle and immune health than by genetics. Topol advocates for a holistic approach to aging that includes a healthy diet, quality sleep, regular exercise, and minimizing exposure to environmental stressors. He highlights advancements in AI and biomarker technology, such as organ clocks and p-tau217, as pivotal in extending health span to better align with lifespan.

<https://www.wired.com/story/big-interview-event-eric-topol-super-agers/>