The Al Moment: Responsible

Al at Microsoft

Ryan Harkins Senior Director, Public Policy U.S. Government Affairs

www.microsoft.com/ai





Al isn't just another piece of technology. It could be one of the most fundamental pieces of technology the human race has ever created.

Satya Nadella

The Promise of Artificial Intelligence



Education





Transportation

Agriculture

The New York Times

THE SHIFT

The Brilliance and Weirdness of ChatGPT

A new chatbot from OpenAI is inspiring awe, fear, stunts and attempts to circumvent its guardrails.

H Share full article 🎓 🎵 🖵 422



So what has changed? Why all the buzz?

What is Al?





Machine Learning



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Cost of storing every book ever written

1987 > US 1 billion [4]

2023 <US \$1,000



130 million books [5]

[4] A history of storage cost, Matthew Komorowski, 2009[5] There Are 130 Million Books in the World, How Many Have You Read?, 2009 by WALLACE YOVETICH

Massive processing power

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"Al the P Russian Is Turned Into English That's Fi By a Fast Electronic Translator VOL. CIII... By ROBERT K. PLUMB A public demonstration of what scientists of the corporation and PIER STRIKE (is believed to be the first success- scholars of the Georgetown Uni-SOUGHT IN CO AS TIE-UPS SP vesterdar afternoon.

Walkout on Another I Dock Stirs Fear of Stoppage Througho

VOTE DISPUTE CON

New Questions Celay Poll Report to Capita Tightens Its Freca

By A. H. LASK Shipping employe's son help yesterday to halt t of Brooklyn pier strik they exploded into a shutdown.

The injunction mos after a second dock closed by a work stopp walkout by seventy-five of the old Internation ahoremen's Association loading of the Billish City of Barcelona it Pic Terminal.

It occurred on the sixth day of a strike by 150 American Federation of Labor dock workers, Ambassador Cuts Visit to U.S. which has prevened removal of cargo from two Isbrandtsen Line freighters at Pier 29, Brooklyn. Although the walkouts had no) apparent connection with one

ful use of a machine to translate versity Institute of Languages meaningful texts from one lan- and Linguistics in Washington. guage to another took place here The "mechanical" part of the translation system, which This may be the culmination of mostly electronic, is a standard centuries of search by scholars commercial model of the largest for "a mechanical translator." So International Business Machines far the system has a vocabulary "stock" computer. This device, of only 50 words. But there are called the IBM Type 701 Elecno foremeable limits to the num- tronic Data Processing Machine, ber of words that the device can was put on the market last April. store or the number of languages Since then twelve of the machines have been sold to commerit can be directed to translate, Scholars and scientists who cial, military and university comworked on it believe that within putation laboratories. The "literary" part of the sys-

a few years the system may greatly increase communication, tem is a mechanical model of lanin technical sub-guage devised at Georgetown by particularly by making translation Prof. Leon Dostert and Dr. Paul jects, Garvin. The corporation's share quick, a:curate and easy. in the project was conducted by The comonstrution was at the Dr. Cuthbert C. Hurd, director of headquarters of the International its Division of Applied Science. Business Machines Cosporation,

In the demonstration, a gir 590 Matison Avenue. It is the result of cooperative research by Continued on Page 5, Colum-

by Week to Report Events -Vatican Backs Pella

looked to a bng-range solution President said, is "akin to treaof the city-state fiscal problem son" and should be dealt with as and could not in all probability, rich. Any person convicted of bear any fruit in time to help the comspiring armed overthrowal of city prepare its 1954-55 budget. Government, he proposed, should "I said almest a year ago," the be "treated as having, by such Mayor declared, "that I was tired act, renounced his allegiance to of the city going to Albany for the United States and forfeited

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TE CITY EDITION r and cold today. Increasing oudiness and cold tomorrow. perature Range Today-Max., 35; Min., 22 peratures Yesterday-Maz., 36; Min., 26 EC. S. Weather Barran Report, Page 41 FIVE CENTS NDING, PERITY, ERSIVES MESSAGE ON UNION **Eisenhower Proposes** Amendment to Give 18-Year-Olds Vote Text of State of Union Message is printed on Page 10. By JAMES RESTON Special to The New York Times. WASHINGTON, Jan. 7-President Eisenhower, in his second State of the Union Message, today asked the almost evenly divided Eighty-third Congress to moderate but sustain the foreign and welfare policies of the New Deal era. He proposed to cut the military budget, to cut taxes in relation to Government expenditures, and to reduce the guarantees to farmers very slowly. The cuts, however, were designed to reconcile security and solvency without

jeopardizing the collective secu-

rity or prosperity policies of the

Historic Achievement: Microsoft researchers reach human parity in conversational speech recognition

October 18, 2016 | Allison Linn







What is Language model?

"I woke up this morning and there was a beautiful blue _____" (Sky, bird, butterfly, flower)

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ChatGPT is an example of a Large Language Model

What is a Language model?

"I woke up this morning and there was a beautiful blue _____" (Sky, bird, butterfly, flower)

ChatGPT is an example of a Large Language Model

What these models do is Math

Models can be very powerful

GPT 4 BAR Exam results

GPT-4 scored **297** on the bar exam in an experiment conducted by two law professors and two employees of legal technology company Casetext.

That places GPT-4 in the 90th percentile of actual test takers and is enough to be admitted to practice law in most states

"Large language models can meet the standard applied to human lawyers in nearly all jurisdictions in the United States by tackling complex tasks requiring deep legal knowledge, reading comprehension, and writing ability"

GPT-4 Passes the Bar Exam

35 Pages • Posted: 15 Mar 2023

Daniel Martin Katz

Illinois Tech - Chicago Kent College of Law; Bucerius Center for Legal Technology & Data Science; Stanford CodeX - The Center for Legal Informatics; 273 Ventures

Michael James Bommarito

273 Ventures; Licensio, LLC; Stanford Center for Legal Informatics; Michigan State College of Law; Bommarito Consulting, LLC

Shang Gao

Casetext

Pablo Arredondo

Casetext; Stanford CodeX

Date Written: March 15, 2023

Abstract

In this paper, we experimentally evaluate the zero-shot performance of a preliminary version of GPT-4 against prior generations of GPT on the entire Uniform Bar Examination (UBE), including not only the multiplechoice Multistate Bar Examination (MBE), but also the open-ended Multistate Essay Exam (MEE) and Multistate Performance Test (MPT) components. On the MBE, GPT-4 significantly outperforms both human

The Promise of Al

Healthcare / Life-Science

- Enhanced diagnosis and personalized treatment
- Drug discovery: cancer; infectious diseases like HIV, hepatitis, COVID-19, and influenza; and neurodegenerative diseases like Alzheimer's and Parkinson's

Education

- Personalized education via custom learning materials tailored to students' individual needs and learning styles.
- Identify at-risk students and provide targeted interventions to improve academic outcomes.

Social Justice

- Reduce bias and discrimination by analyzing large datasets to identify discrimination patterns
- Develop fairer hiring and promotion practices
- Identify and address systemic inequalities in housing, lending, healthcare

Climate Change

- Enhanced climate models via analysis of data from sensors and satellites
- Risk assessment: assess and predict impacts of climate change on infrastructure, ecosystems, and human populations, and develop adaptation and mitigation strategies

Materials Science

- Superconductivity: zero resistance at high temperatures > more efficient power grids
- High-strength: stronger, lighter, more durable products aircraft, vehicles, buildings, bridges
- Self-healing: med. devices, infrastructure, electr.

Energy

- Optimize energy consumption and reduce waste
- Carbon capture and storage: Generative AI can help identify new materials and technologies for capturing and storing carbon emissions from power plants and industrial processes

Agriculture

- Crop breeding: pest, disease, climate-resistant
- Precision Ag: optimize fertilizer, pesticide, H2O
- Food-safety: detect/prevent food-borne illness via microbial data analysis and identifying contamination patterns

Finance

- Predict market trends, optimize trading/investment strategies
- Detect fraud and other financial crimes
- Risk assessment
- Personalized advice

Creative Expression

- Help writers, artists and musicians create new and innovative works by providing them with inspiration and ideas
- Generate new designs for products and buildings, and optimize layout and functionality of cities and public spaces

Design Al to augment human abilities



Make Al available to everyone



and every institution .. so that they can go on to solve the most pressing problems of our society and our economy." – Satya Nadella

Why Responsible AI?

"When your technology changes the world, you bear a responsibility to help address the world that you have helped create."

> Brad Smith President and Vice Chair, Microsoft Corp.



Responsible AI at Microsoft



A five-point blueprint for public governance of Al

📑 Microsoft

Governing AI: A Blueprint for the Future





Implement and build upon new govt-led **AI Safety Frameworks**

 Q_{1}

Require effective **safety brakes** for AI systems that control **critical infrastructure**



Develop a broad **legal and regulatory framework** based on Al's tech architecture



Promote **transparency** and ensure **academic and nonprofit access** to AI



Pursue new **public-private partnerships** to use Al as an effective tool to address the inevitable **societal challenges** that come with new tech

3. Develop a broad legal and regulatory framework based on the technology architecture for AI



The technology stack for AI foundation models



A proposed AI regulatory architecture



Ideas for State Policymakers







Comprehensive Privacy Legislation

Consider taskforces to review **existing laws** & identify gaps re: **protections** & **AI applications**



Consider **executive order or legislation** re: government and AI (commissions; procurement & NIST AI RMF; governance; facial recognition)



Legislation to require risk assessments, address consequential automated decision systems



Legislation to address **political deepfakes**

Questions?