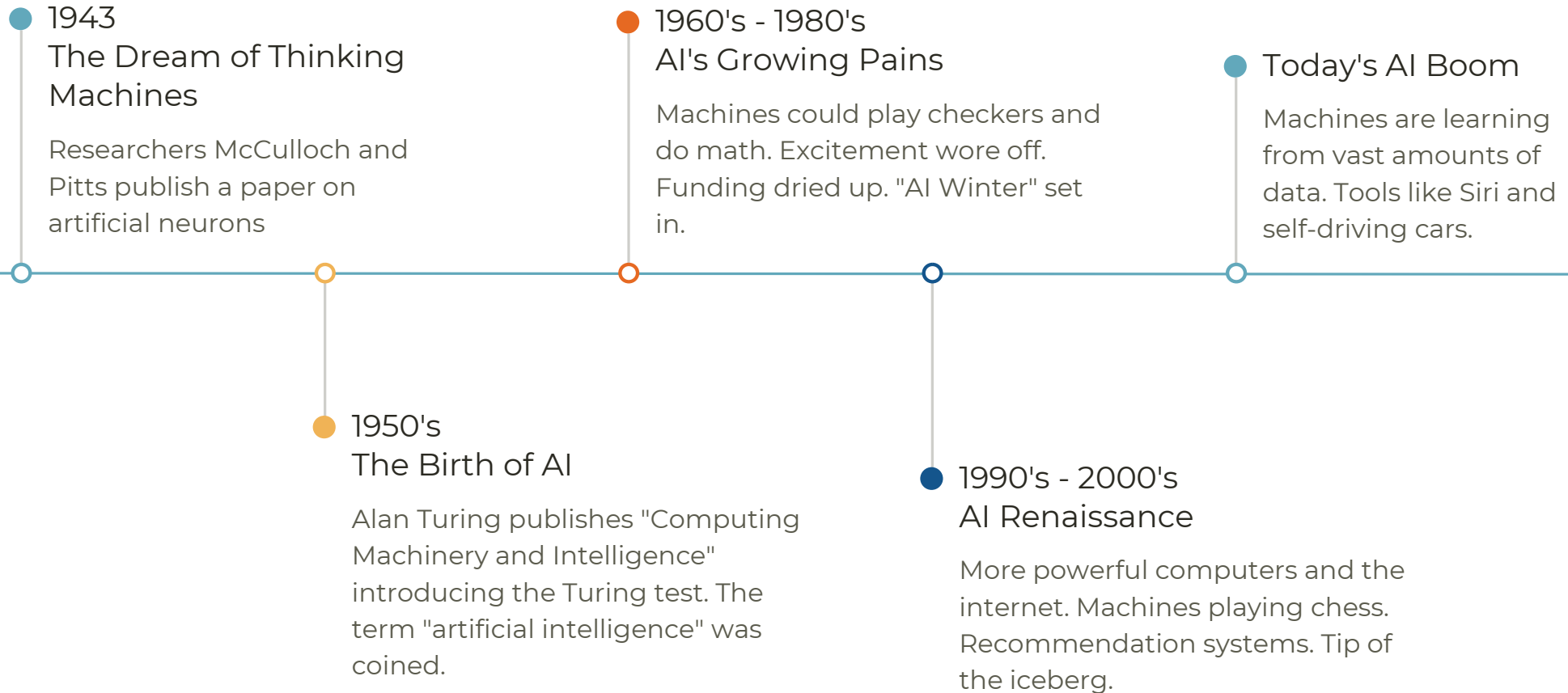




Artificial Intelligence: Past, Present and Future

A brief introduction to AI including a review of AI in business, cybersecurity, productivity tools like ChatGPT, and other AI use cases.

Brief History of Artificial Intelligence



General AI Terms



Artificial Intelligence (AI)

The broad field of creating intelligent machines.



Machine Learning (ML)

Algorithms that improve over time based on data, without explicit programming.



Neural Network

Algorithms designed to recognize patterns.



Deep Learning

Neural networks with many layers for advanced analysis.



Natural Language Processing (NLP)

Enables machines to understand human languages.



Generative AI

AI that generates text, images or media in response to prompts.



Artificial General Intelligence (AGI)

AI that possesses the ability to understand, learn and apply knowledge.



Prompt Engineering

Crafting input prompts to maximize the output of AI models.

These are some of the key terms and concepts in AI that are important to understand.

Neural Networks

- **Neurons**
- **Learning**
- **Layers**
- **Feedback**
- **Training**



Artificial Intelligence In Your Everyday Life

- Search engines
- Email platforms
- Social media feeds
- Online shopping
- Virtual assistants
- Smartphones
- News platforms
- Video games
- Smart home devices

Overview



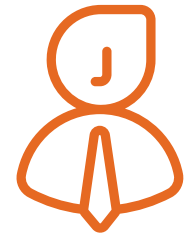
Rapid Progress

Artificial intelligence has been quickly advancing in recent years



Amplifying Capabilities

AI is enhancing human abilities in many domains



Transforming Business

The way companies operate is changing due to AI adoption

Artificial intelligence is having a major impact across industries and applications.

Enhancing Customer Interactions and Operations



Credit Scoring

Traditional credit scoring relies on a limited set of variables. AI can analyze vast amounts of data, including non-traditional data, to assess creditworthiness



Automated Customer Support

AI can be used to predict when a customer might need support based on their activity and proactively offer assistance or resources.



Voice Recognition

Voice-activated systems in banking allow users to conduct transactions, check balances, or get answers to queries without needing to visit a branch or even touch their phone.



Operational Efficiency

AI can optimize back-end operations, ensuring that customer requests like loan applications or dispute resolutions are processed more quickly and efficiently.



Fraud detection

AI analyzes transactions to detect fraud

Empowering Customers with Responsive and Voice-Activated Banking Experiences.

Data Insights and Personal Financial Management



Sentiment Analysis

Financial institutions can use AI to monitor social media and news sources for events or sentiments that might affect financial markets. This can then be relayed to customers or used to inform trading strategies.



Market Insights and Forecasting

Advanced AI models can provide customers with insights into market trends, helping them make more informed investment decisions.



Personalized financial advice

Robo-advisors use AI to provide personalized investment portfolios



Budgeting and Financial Management

AI can analyze spending habits and offer insights and recommendations to customers on how they can save money or better manage their finances.

Optimizing Financial Decisions through Behavioral Analytics and Smart Management.

Market Strategies and Personalized Engagements



Behavioral Analytics

By analyzing the digital footprints and transactional behaviors of customers, financial institutions can gain insights into customer needs and preferences, allowing them to tailor products and services accordingly.



Personalized Banking

AI can analyze a customer's transaction history to offer personalized product recommendations, such as specific credit cards, loans, or investment opportunities.



24/7 customer support

Chatbots can answer customer queries anytime

Driving Strategic Insights and Precision Marketing with AI.

Other AI Uses



Healthcare



Finance



Transportation



Marketing



Cybersecurity

AI's Impact on Jobs



AI initially feared to displace jobs
Early uses did not impact employment growth



AI models have advanced language skills
But also fabricate information and have limitations

While transforming legal work, AI unlikely to replace the profession entirely

AI Challenges



AI can create false information

A U.S. judge on Thursday imposed sanctions on two New York lawyers who submitted a legal brief that included **six fictitious case citations** generated by an artificial intelligence chatbot, ChatGPT.

While AI brings efficiency, addressing its challenges will be critical.

Billing Model Considerations

Professions currently using an hourly billing model conflicts with AI's ability to improve efficiency. Adopting AI may be slowed by conservatism about changing traditional practices.



AI and Cybersecurity: A New Era of Challenges



AI phishing

AI can craft convincing phishing emails by analyzing communications and behavior



Smart malware

AI malware adapts to environment, bypassing defenses



Deepfakes

AI creates realistic fake content for misinformation campaigns



Adversarial attacks

AI deceives systems into making wrong decisions



Automated exploits

AI discovers vulnerabilities faster than defenses

What Scares Me the Most? Deep Fakes

Deep fakes are a form of artificial intelligence that utilizes machine learning to create realistic digital impersonations of people and their likenesses. This emerging technology has raised significant ethical concerns, as deep fakes can be used to spread misinformation or manipulate media content in ways meant to deceive.



AI and Cybersecurity: Fighting AI with AI

Malware detection using AI

Phishing email detection with AI

Automated threat intelligence with
AI

AI-powered
network security



What Can I Do to Stay Protected?



Update software regularly



Stay informed on threats



Use advanced threat detection



Enhance authentication (MFA)



Train employees



Backup data regularly

The Future of AI

AI in 2030

1. Disaster Protection
Early Detection of Natural Disasters
2. Healthcare Revolution
Early Detection, AI-assisted Procedures for Surgeons
3. Job Creation
AI will create 12 million more jobs than it displaces
4. Space Exploration
AI Robotic Explorers
5. AI Will Seamlessly Integrate Into Our Daily Lives



From Underdog to Champion: AI's Power Play for Vital Edge

Pinnacle Health vs Vital Edge



Using AI for Customer Acquisition



Optimal Marketing Mixtures



Simulate and Test Strategies



More Data Drives More Success

AI and machine learning transforms every aspect of customer acquisition, enabling more effective and efficient targeting.

AI Increases Customer Lifetime Value



Reveals Hidden Buying Patterns



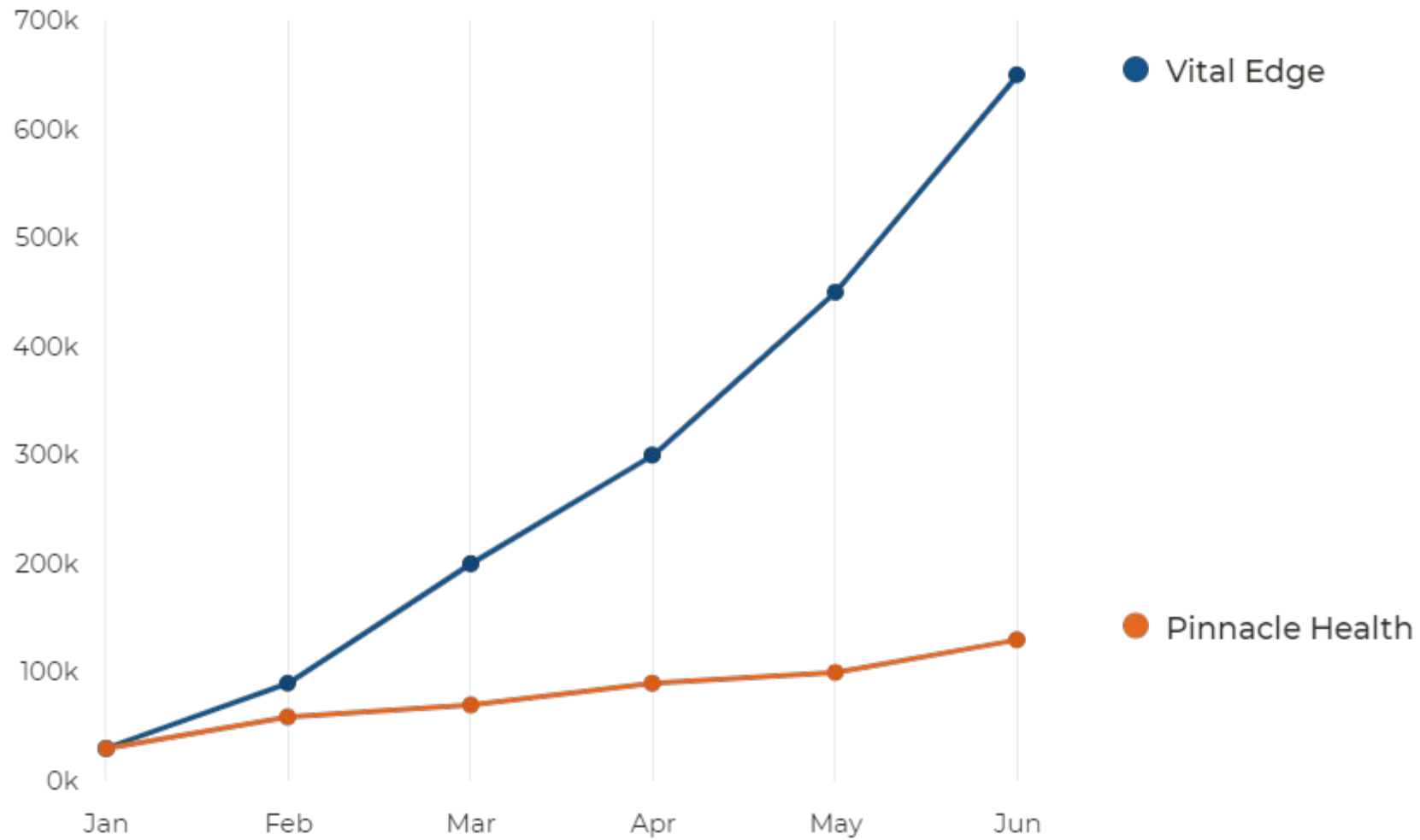
Offers Personalized Product Suggestions



Customers Become Your Best Promoters

AI elegantly transitions many of the customers into promotional advocates leading to an exponential growth explosion.

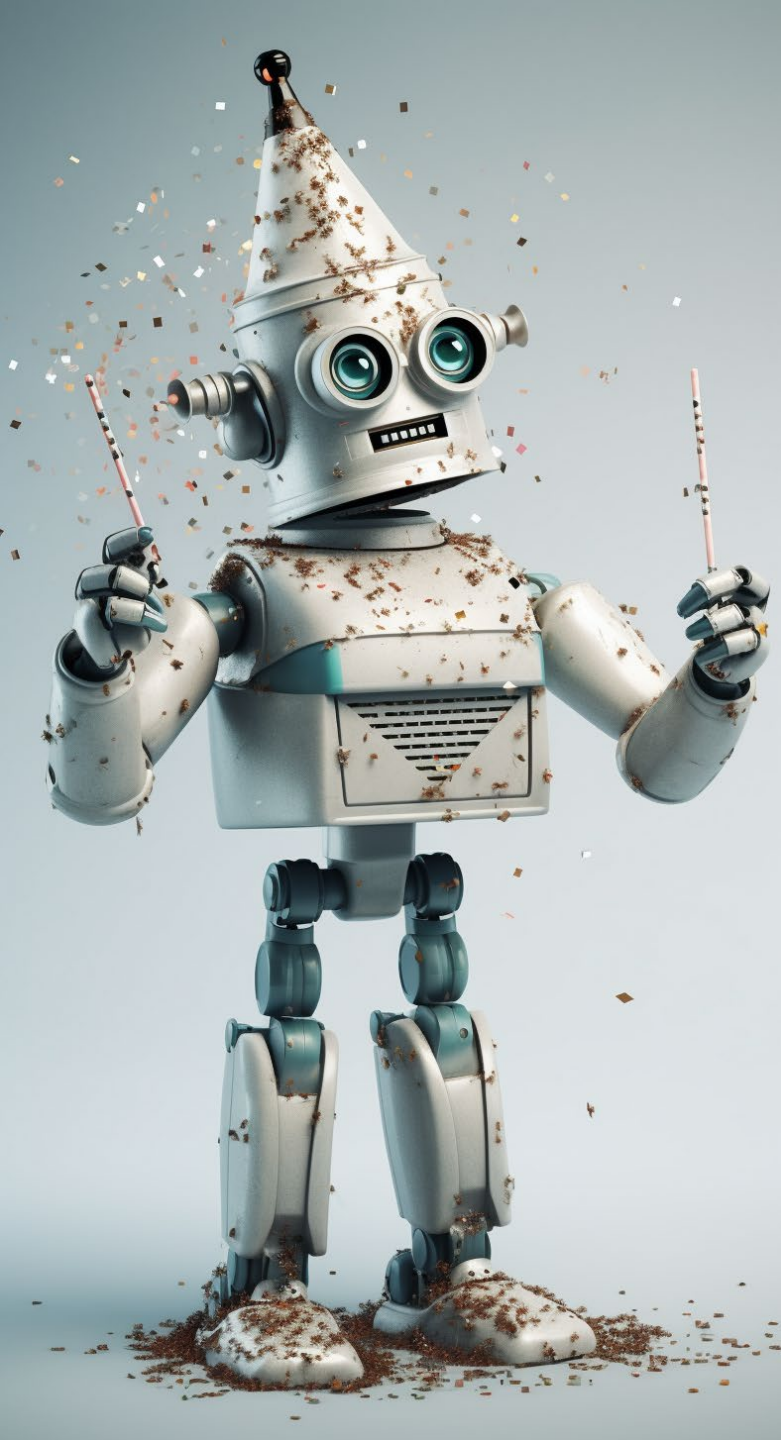
Performance Comparison





ChatGPT

<http://chat.openai.com>



ChatGPT's Notable Accomplishments

- Passed Uniform Bar Exam

Scoring in the 90th percentile

- Passed Wharton MBA Exam

The ChatGPT-3 powered chatbot passed the final exam of the MBA course scoring between a B- and B grade.

- Writes Computer Code

ChatGPT has been trained to comprehend and generate code in languages such as Python, JavaScript, HTML, CSS, SQL, Java, C#, C++, Ruby, PHP, R, Swift, and more.

- Fastest Growing Application in History

Reached 100 million users just two months after launch.

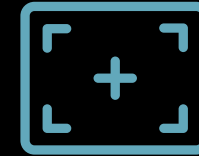
Context and Prompts



Context provides meaning

Context helps the AI understand the meaning and purpose behind prompts.

"I am a criminal defense lawyer in North Carolina defending a client accused of murder." VS "I'm going to ask a legal question."



Clear prompts get better responses

Well-formed, detailed prompts with sufficient context yield more accurate AI responses.

Prompt Engineering is the skill you need to develop in order to survive.

Providing clear context and detailed prompts is key to getting good results from AI.



ChatGPT Context and Prompts

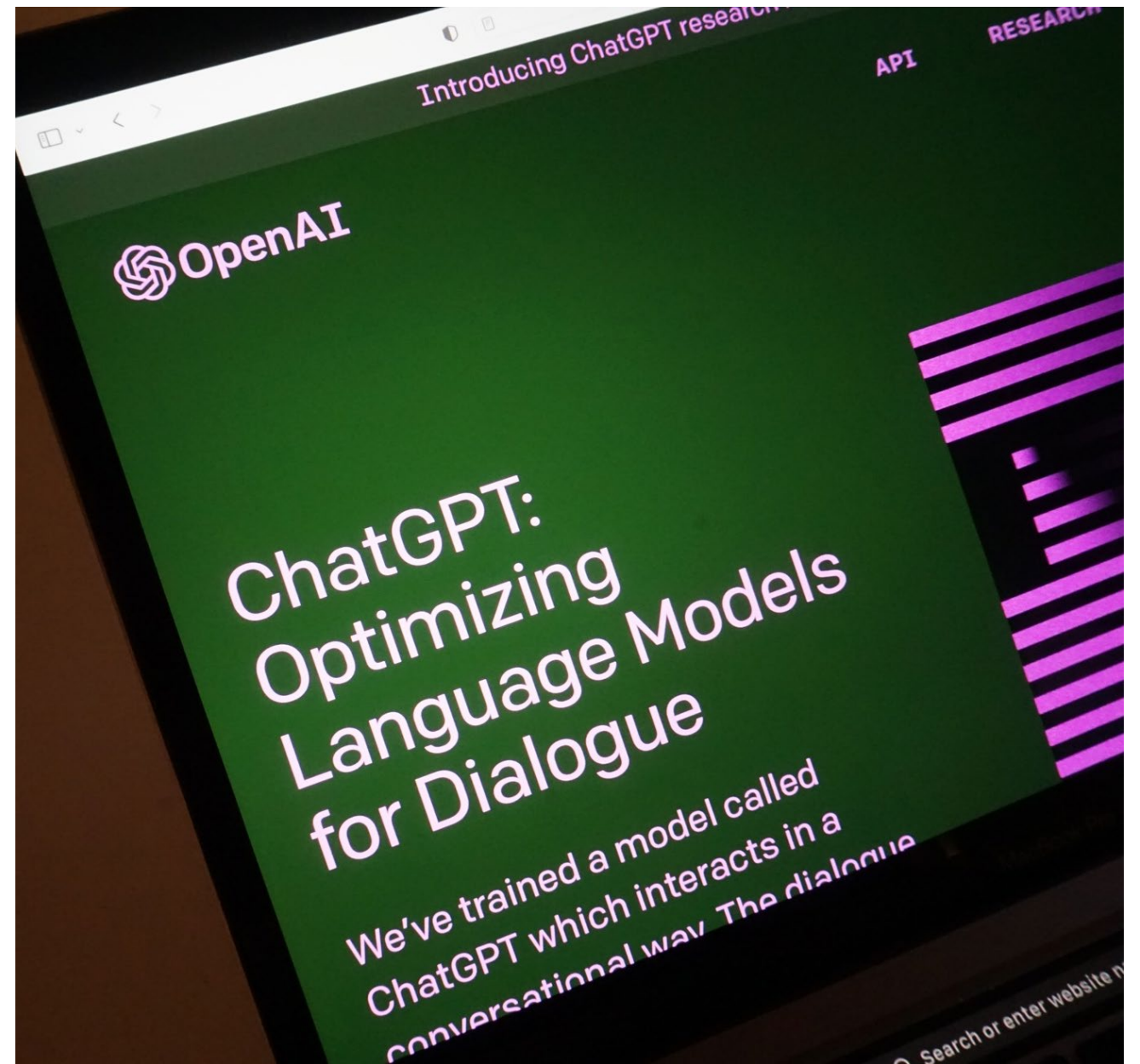
- Take on the persona of...
- Summarize
- Explain
- Rewrite
- Provide Reference or Source
- Chrome Extension: Sider - ChatGPT Sidebar

ChatGPT Live Demo

Context and Prompting

Training ChatGPT to Become Your Voice

Practical Day-to-Day Uses



AI Prompting and Midjourney

Success in future AI applications will rely heavily on the broader concept of prompting, which involves providing AI systems like Midjourney with detailed instructions to generate specific visuals. Prompting allows us to guide AI creations in line with our goals.





Chihuahua on the beach



Chihuahua bride on
the beach at sunset



Diamond wedding
ring among shells on
the beach at sunset



Half a pimento cheese
sandwich on whole
grain bread, on the
beach at sunset with a
seashell garnish



accountants
playing poker

MIDJOURNEY



**accountants
playing poker
in a smoke
filled room,
laughing,
having fun,
photorealistic
4k**

MIDJOURNEY

There's an AI for that.



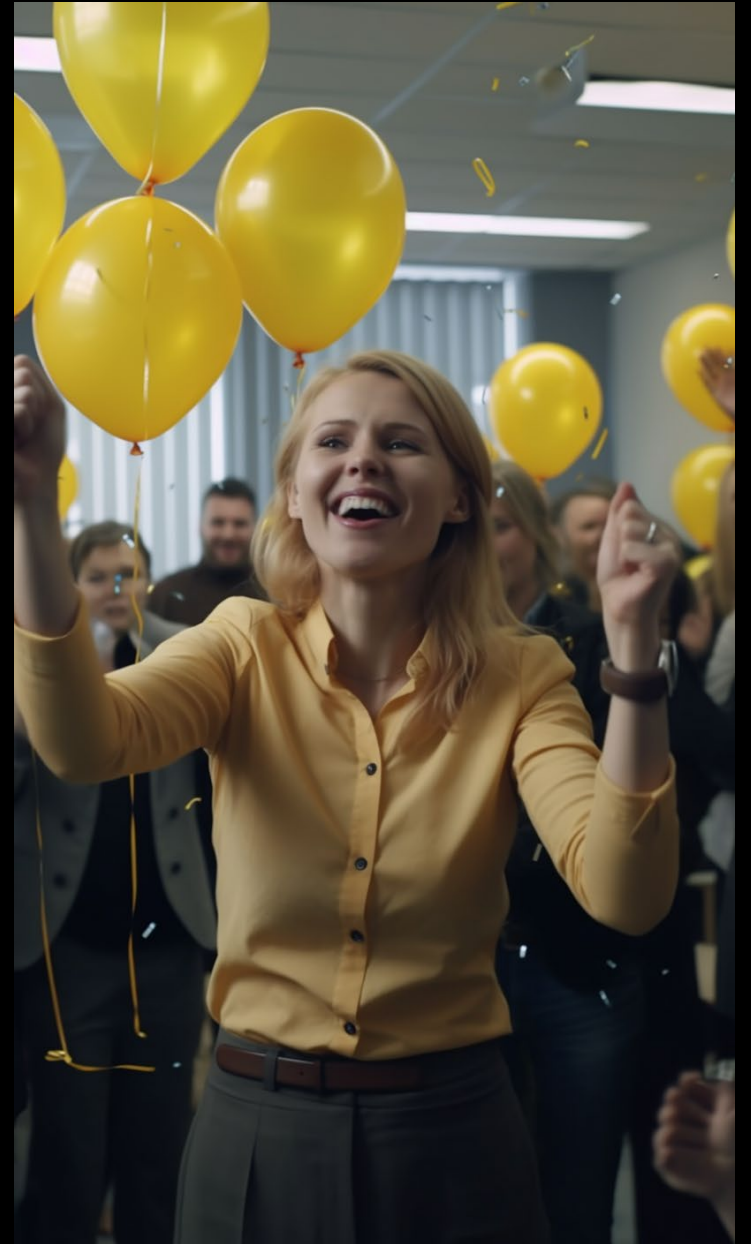
theresanaiforthat.com

7,008 AIs for 1,942 tasks. Updated daily.

“In the future, there will be two types of businesses: those that embrace AI and those that are out of business.

”

Unknown Futurist





Rafe Martin

🌐 comtechnc.com

☎ 336-338-7328

@ rafe@comtechnc.com