

The Potential of Utilizing AI in Statistical Works

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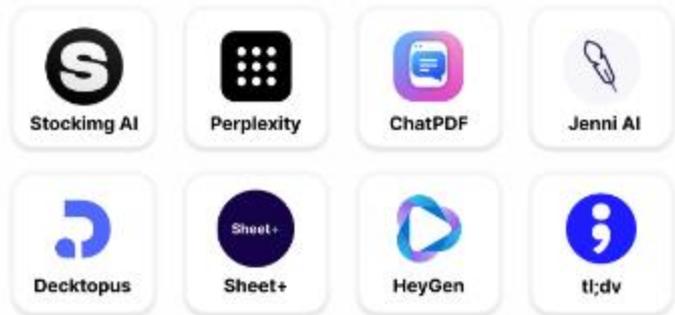


AI Tools are Proliferating

The screenshot shows the ChatGPT Plus interface with a 'New chat' button and a 'PLUGINS' dropdown menu. Below the menu, several plugins are listed with their respective logos and brief descriptions:

- Wolfram Alpha:** Dynamic computation and curated data from Wolfram Alpha.
- Klarna Shopping:** Search and compare prices from thousands of online shops.
- LangChain Docs:** Up-to-date information for the LangChain Python library.
- TODO Plugin:** Plugin for generating explainer with AI.
- TODO Plugin (no...):** Plugin for managing a TODO list, you can add, remove and view your TODOs.
- Expeda - Text:** Bring your trip plans to life - get it all there, find things to see and...
- Odrant...:** (Logo visible, description partially obscured)
- Slack:** (Logo visible, description partially obscured)
- Zapier:** (Logo visible, description partially obscured)

At the bottom, a message states: "GPT-4 currently has a cap of 25 messages every 3 hours." Below this is a text input field with the placeholder "Send a message."



The screenshot shows a 'Generative AI' resource page with a red logo and the text 'Curated by @sawastin'. The page lists various AI tools categorized by function:

- Text-to-Image (T2I):** DALL-E 2, Stable Diffusion, crayon, Lexica, Midjourney, Imagen, WEMBA, RunwayML, GauGAN2, DeepAI, Jasper, Artbreeder, Wonder, pixray-text2image, natural love, Omneky, atpoco, mago, sphaase, KREA, Nya . gallery, ROSEBUD.RI, PhotoRoom.
- Text-to-Voice (T2V):** ElevenLabs, F5AI, Synthesia, DG, Meto AI, Google AI, iStock, Contender.
- Text-to-Audio (T2A):** Play AI, AMBLY, RESEMBLE.AI, WILLSON, Descript, Soundraw.
- Text-to-Text (T2T):** Simplified, Jasper, Frase, Bloomer, Resonator, Letterdrop, Gammify, Copy AI, MarketMuse, AI21 Labs, HubSpot, NovelAI, InterKit, GooseAI, Grammarly, Grammarly, Copy AI, Ideas AI, CopySmith, Flowrite, OpenAI GPT-3, Blog Idea Generator, Hypothesys, Subtext, Writer, Lark, Compose AI, Moonbeam, Surto, Anyword, Hypotenuse AI, Peppertype AI.
- Text-to-Motion (T2M):** Runway, MDM, Human Motion, Diffusion Model.
- Text-to-Code (T2C):** Replit, Ghostwriter, GitHub Copilot, Mutable AI, TobiNINE, Amazon CodeWhisperer.
- Text-to-NFT (T2N):** Lens AI.
- Text-to-3D (T23D):** DreamFusion, CLIP-Mesh, GET3D.
- Audio-to-Text (A2T):** Descript, AssemblyAI, Whisper.
- Audio-to-Audio (A2A):** AudioLM, NN-VoiceMod.
- Brain-to-Text (B2T):** Speech from brain, non-invasive brain recordings.
- Image-to-Text (I2T):** NaturalScribe, GPT-3 & Image Captions.

Including in Statistical Works

AI in Data Collection and Processing

Automating data collection processes and eliminating manual errors. The use of AI generated algorithms for data cleaning, preprocessing, and feature extraction

- Lionbridge AI
- Google AI
- MS Azure AI (ML, CS)
- Amazon WS (SageMaker, Rekognition)
- IBM Watson (NLP, VisRec,

AI in Statistical Analysis

AI techniques such as machine learning can be employed for predictive analytics, clustering, and classification. AI also has advantages in handling large and complex datasets for statistical analysis

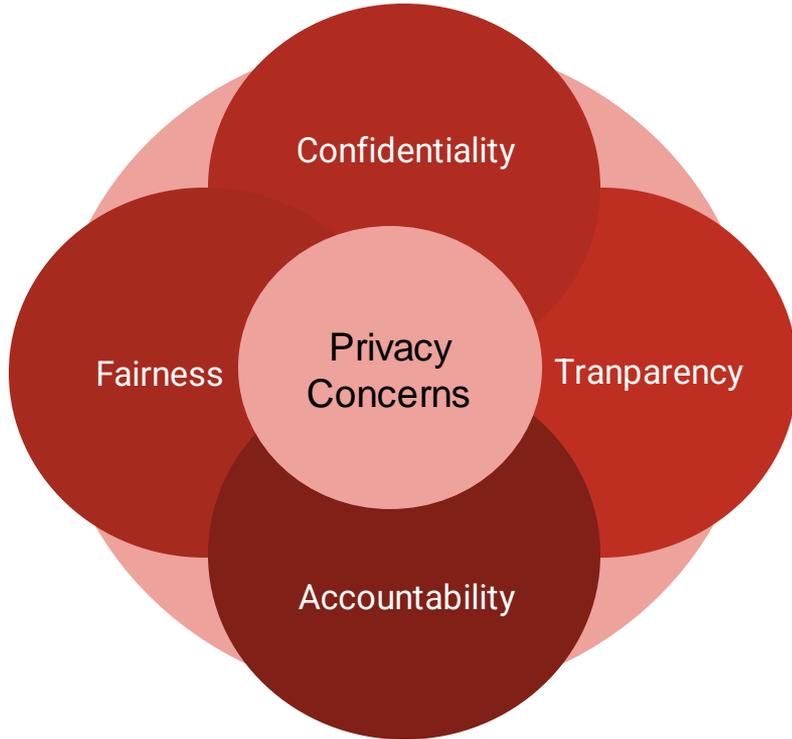
- Google Cloud AI
- SAS Viya
- RapidMiner
- MS Azure AI (ML, CS)
- Amazon WS (SageMaker, Rekognition)

AI in Data Visualization and Reporting

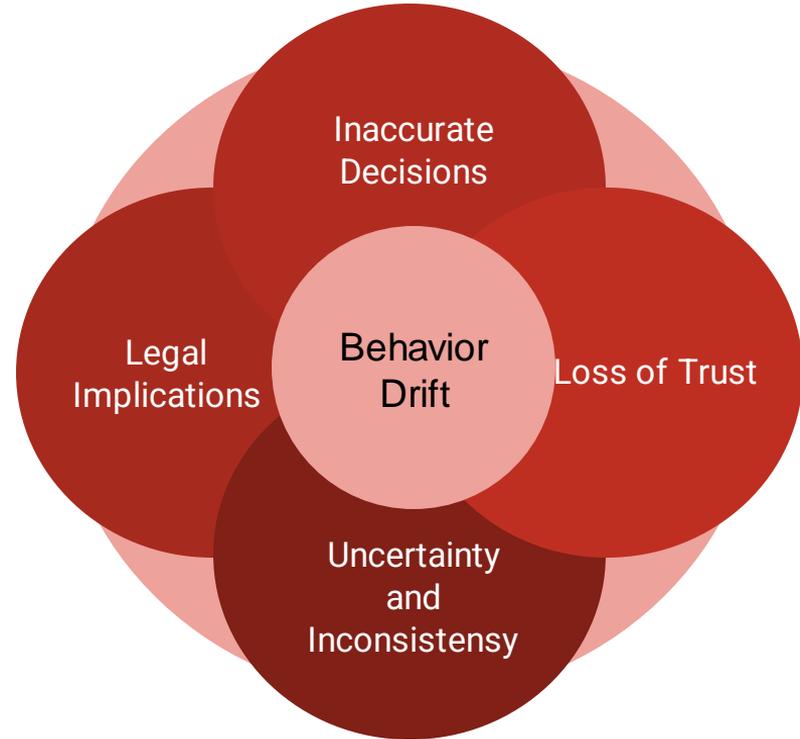
AI has the ability to generate interactive and insightful visualizations. How AI-powered tools can automate report generation and provide real-time analytics

- Tableau
- Qlik Sense
- Looker DV
- MS Power BI
- Sap Analytics Cloud

Ethical Considerations and Challenges



Techniques like explainable AI (XAI), which aims to make the decision-making process of AI systems understandable to humans. Establishing clear policies and procedures for handling data and making decisions, and ensuring that there are mechanisms in place to hold AI systems (and their operators) accountable for their actions.



Securing the Training Data: running common AI service with secured inputs and periodic retraining, Providing manual on using AI in statistical work.
Continuous Monitoring and Evaluation

Future Possibilities and Works Ahead

Potential Enhancements by AI:
Automated Data Collection, Data
Management, Automated
Classification and Cataloging,
Quality Control (identification of
anomalies, confronting with
macro indicators)

Emphasizing the need
for continuous learning and
collaboration between
technologists and
statisticians
Establishing firm and agile
regulation
Ensuring technical and non
technical readiness to
utilize AI

