AstraZeneca

The Role of Standards in Future of Programming

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Where are we headed in the Future

- AI
- Automation
- Data exploration and Analysis – Data Investigator

Introduction to AI

What is AI?

Artificial Intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think and learn like humans…

AI in Various Industries

AI has the potential to revolutionize various industries, including healthcare, finance, and transportation, by increasing efficiency, accuracy, and productivity. Effecting

AI in our Industry

Significant impact on our role…Should we leverage AI or should we all become Sean Connors?

No Need for Introduction for Automation

The Need for Standards

Ensuring Accuracy

Standards are necessary to ensure that AI produces accurate results when queried, stays predictable and stays trustworthy. Without standards, it will be unreliable, causes hallucinations and inaccurate results.

Avoiding Bias

Standards can help prevent bias in AI algorithms, which can lead to unfair treatment of data or groups. Standards can ensure that AI is developed with a fair and unbiased approach.

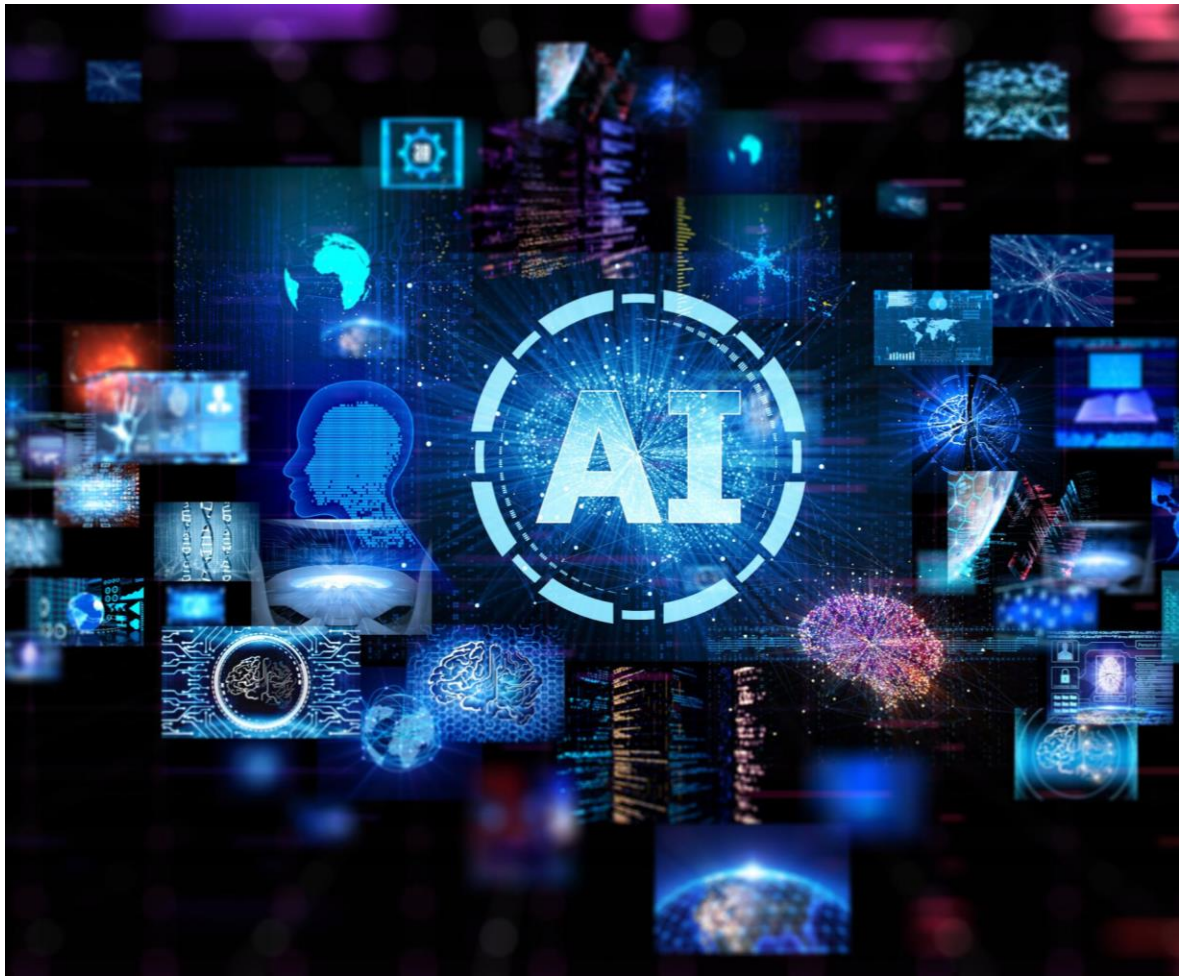
Protecting Privacy

AI technology has the potential to collect and use vast amounts of confidential data. Standards can help protect user privacy and ensure that data is collected and used in a responsible and ethical manner.

Let’s stay on AI for 1 more min…

- 16 words vs 6 words in a sentence – Prompt engineering
- Cone range of possibilities with more word's vs less words.
- Date format is be a good example for standards.
- So that AI doesn't take over the world, with standards we can keep it focused and prevent hallucinations

Following Standards



CDISC Standards

Most of our work is governed by these standards, we follow them closely.

Programming and Company Standards

Using different programming languages like SAS, R, etc.

Company level standards and Reviewer guides

IR and Adhoc request/meetings

Data Cross checks

Ensuring routine cross checks with the study and across studies within a project

Advantages

Training

Standards can provide guidelines and best practices for data collection, preprocessing, model architecture, optimization, and regularization. This can reduce the risks of data leakage, overfitting, and bias, and improve the reproducibility and comparability of LLMs.

Efficiencies

Standards can facilitate the interoperability and integration of LLMs with other software components and platforms. This can reduce the development time and cost, and increase the productivity and provide opportunity/time for innovation

Applications

This can enhance the trustworthiness, accountability, and transparency of LLMs, and foster the collaboration and communication among different stakeholders and communities.

End User

Expand the user base beyond programming and easy transition

What is our Role?

Innovators

We are not just the architects of complex algorithms and data models; they are also the visionaries who translate data into actionable insights, driving both technology and business forward in unprecedented ways. Innovation in statistical programming frequently involves the development of new algorithms tailored to solve specific problems.

Developers

No longer confined to the realm of pure statistics, these professionals are increasingly stepping into the shoes of code developers. No longer confined to the realm of pure statistics, these professionals are increasingly stepping into the shoes of code developers.

Operators

Routine tasks during study conduct or standard deliverables in our projects

Conclusion

Standards are crucial for ensuring outputs are developed and used in a reliable manner, protecting data privacy and improving programming efficiencies. As AI continues to permeate our industry, it is important that we establish the standards either at industry level or within a company.