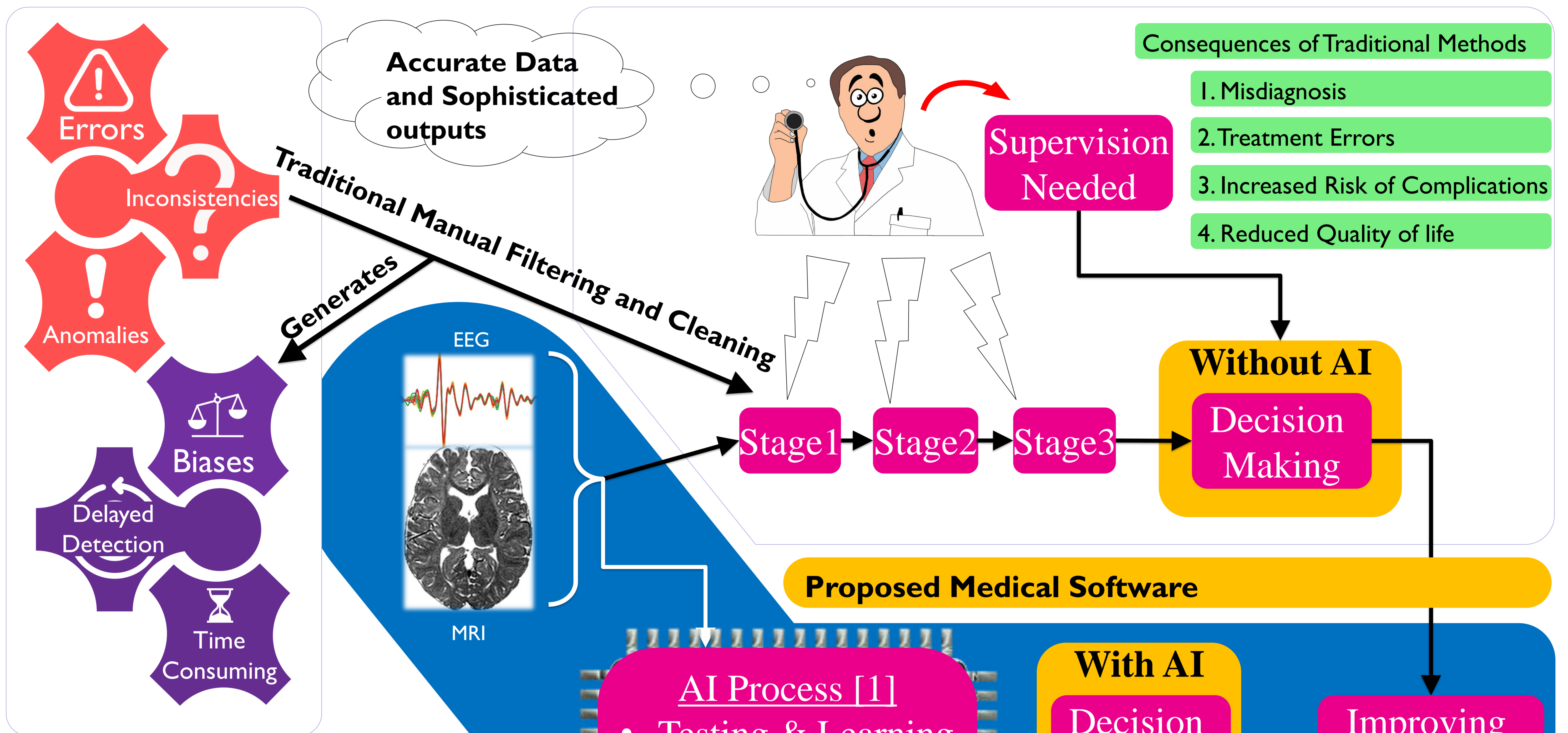


# AI-Enabled Fault Detection and Autonomous Repair for Medical Software in Brain Health

Sameera Gamage, Minna Isomursu, Pantea Keikhosrokiani, Nirnaya Tripathi  
[Sameera.gamage@oulu.fi](mailto:Sameera.gamage@oulu.fi), [Minna.Isomursu@oulu.fi](mailto:Minna.Isomursu@oulu.fi),  
[Pantea.Keikhosrokiani@oulu.fi](mailto:Pantea.Keikhosrokiani@oulu.fi), [Nirnaya.Tripathi@oulu.fi](mailto:Nirnaya.Tripathi@oulu.fi)

## Problem Definition



## Research Questions

How to optimize anomaly detection Methods For Brain Health related disease data?

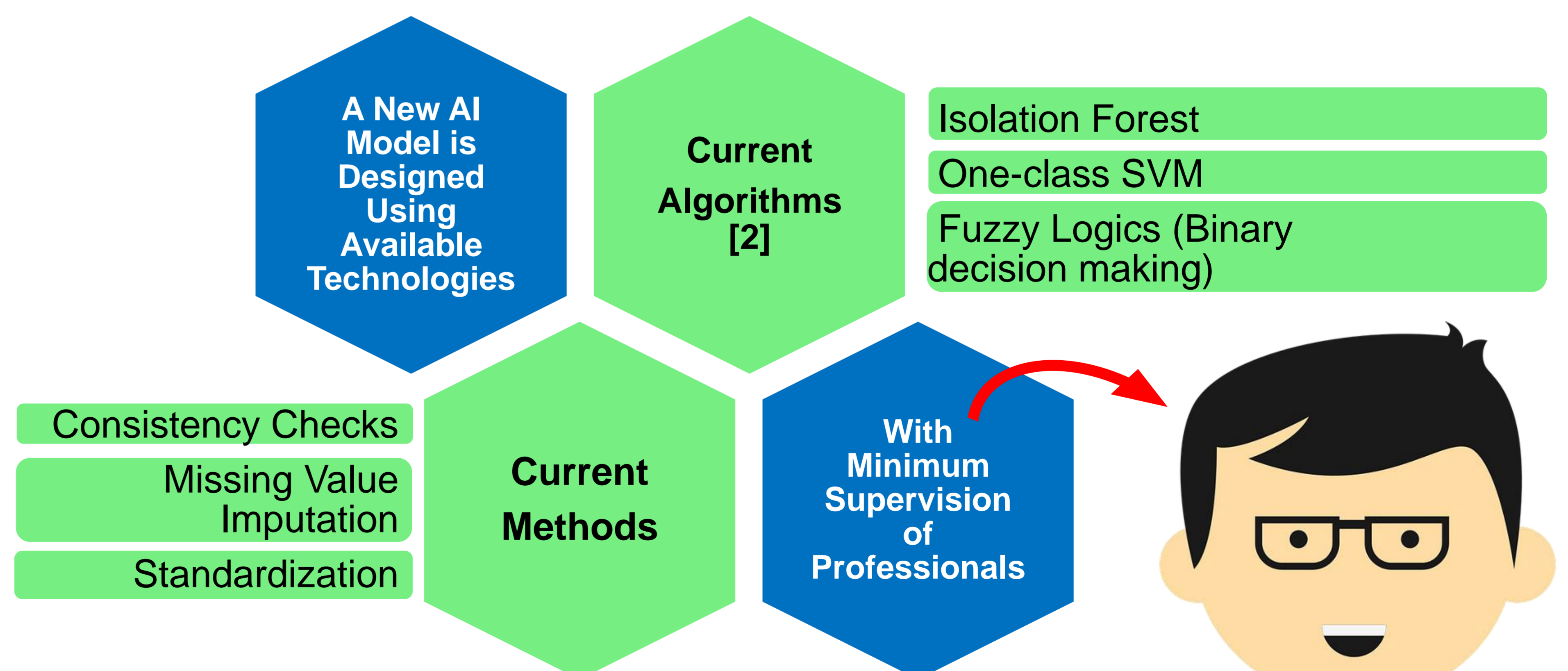
How to Implement Ethical implications and safeguards for AI-driven self-repair in medical data & Software Process?

How to Evaluate fault detection and self-repair Impact on medical data And Software quality?

## References

1. Qu, J., Cui, L., Guo, W., Bu, L., & Wang, Z. (2024). Development of a novel machine learning-based approach for brain function assessment and integrated software solution. *Advanced Engineering Informatics*, 60, 102461.
2. Karadayi, Y., Aydin, M. N., & Ogrenci, A. S. (2020). Unsupervised Anomaly Detection in Multivariate Spatio-Temporal Data Using Deep Learning: Early Detection of COVID-19 Outbreak in Italy. *IEEE access : practical innovations, open solutions*, 8, 164155–164177. <https://doi.org/10.1109/ACCESS.2020.3022366>

## AI in Brain Health



Both Medical Data and Medical Software Process are Tested, Fault detected and Self Repaired By this Proposed AI Model