Wyatt Blair

EMT-678-WS: Big Data Technologies

10/18/2024

**Term Paper Proposal – Inefficiencies in the American Healthcare System**

**TOPIC:** Inefficiencies in the American Healthcare System and how modern big data solutions could combine and utilize seemingly orthogonal datasets to improve predictive and preventative care.

**ABSTRACT:** The American Healthcare system is infamously inefficient; spending more money per capita and getting less in return than any other developed nation. When compared, preventative care emerges as a key difference between the U.S. Healthcare System and other more efficient national healthcare systems. Another characteristic of the American Healthcare System is that the data, although abundant, is highly fragmented, is owned by many different private entities, and is protected under federal laws such as HIPAA. Modern technological breakthroughs in Large Language Models and other Attention Networks have begun to show promise in merging complex databases into a coherent dataset from which powerful predictive models could be trained. These predictive models may be the exact leap-frogging technology that the American Healthcare System has been waiting for.

**SOURCES:**

* <https://pmc.ncbi.nlm.nih.gov/articles/PMC2659297/>
* <https://innovaccer.com/resources/blogs/nine-data-aggregation-challenges-facing-providers-2023>
* <https://airbyte.com/data-engineering-resources/integrating-vector-databases-with-llm>
* <https://arxiv.org/html/2402.01763v2>