**3.1 Ethical Issues (red)**

(DiGiorgio & Ehrenfeld, 2023) ChatGPT still lack to diagnose and treat complex medical condition, so its work should be unburdening physical from computer and enhancing patient physical relationship such that physical workflows improve.

(Xue et al., 2023) AI technology supports disease prediction, diagnosis, and assessment of therapeutic targets, such as providing treatment guidelines for cancer patients based on their magnetic resonance imaging radiomics.

(Hopkins et al., 2023) ChatGPT has demonstrated a remarkable ability to minimize alarm, surpassing the performance of Google's feature snippet. However, the use of ChatGPT underscores the need for regulators and healthcare professionals to develop minimum quality standards and to raise awareness among patients about the limitations of emerging AI assistants. Users must continue to seek medical attention for any serious symptoms and discuss their individual cases with their physicians.

(Arif et al., 2023) It has also been tested for medical education and clinical decision-making, showing promising results.

It has also been tested for medical education and clinical decision-making, showing promising results. The authors suggest using ChatGPT as an add-on to constructive writing, reviewing material, and rephrasing the text rather than providing a whole original blueprint. The article concludes that a surveillance system should be introduced to ensure students do not use ChatGPT for medical assignments, and we need a group of policies to cross-check the data generated by such AI systems and control their access.

(Morreel et al., 2023) The article emphasizes the potential of ChatGPT, as its score is expected to increase as the model improves and warns educators to expand their measures to prevent fraud concerning the use of ChatGPT for multiple-choice exams, in addition to paper assignments and open-question exams.

(Kung et al., 2023) The authors propose the need for an open science research infrastructure to standardize experimental methods, readouts, and benchmarks to describe and quantify human-AI interactions.

(Baumgartner, 2023) The article also raises important medical ethics issues, including the need for proper training and validation of the ChatGPT algorithm before it can be used, and the risk of students and medical staff being influenced by the tool and misinterpreting medical knowledge.

(Park et al., 2023) To ensure the safe and optimal integration of ChatGPT into otolaryngology, several precautions must be taken, including a comprehensive review of the existing literature, an understanding of ChatGPT capabilities and limitations, pilot testing to identify any challenges, and, most importantly, patient privacy and confidentiality.

(Hassan et al., 2023) The article concluded that ChatGPT demonstrated a strong understanding of the potential applications and consequences of AI in surgery and robotics. It identified several ways in which AI may shape the future of surgery, including improved accuracy and efficiency, predictive analytics, training and education, and new treatments and technologies. The authors suggest that ChatGPT could be a valuable tool in surgery, although careful consideration of the potential impacts and implications of its use is important.

(Anderson et al., 2023) The article highlights the potential threat AI-generated texts could pose to the integrity of scientific literature and calls for increased awareness of the need to protect intellectual property in the field of sports and exercise medicine. The article highlights the potential threat AI-generated texts could pose to the integrity of scientific literature and calls for increased awareness of the need to protect intellectual property in the field of sports and exercise medicine.

(Cox et al., n.d.) . The authors emphasize that patients must prioritize consultations with qualified plastic and reconstructive surgeons for personalized advice and note that ChatGPT-4 should be seen as a supplementary tool. The authors hope that AI-driven language models can enhance patient education and improve patient-provider communication in cosmetic surgery procedures.

(Marchandot et al., 2023) ChatGPT in academic research, such as the model may not always produce accurate or unbiased results and may lead to a decrease in critical thinking and creativity among researchers.

(Liu et al., 2023) including the sensitivity of the ChatGPT model and the need for additional informatics work to implement them in EHRs. Nevertheless, AI-generated suggestions have great potential for improving CDS alert logic and could be an important part of optimizing CDS alerts and supporting their implementation.

(Dergaa et al., 2023) researchers must incorporate expert-driven fact-checking and verification processes into their academic work while maintaining vigilance, and high-quality journals should include technologies or human verification steps capable of identifying LLMs’ interference.

**3.2 Trust Issues (yellow)**

(DiGiorgio & Ehrenfeld, 2023)ChatGPT can provide algorithm-based medicine, but author has complained that it will replace clinical judgement with process measures.

(Xue et al., 2023) It cannot update training data in a real-time manner, and it can only give general and vague answers in some exiting medical related conversations. Potential negative impacts such as privacy concerns, bias, discrimination, and so forth should not be underestimated.

(Moons & Van Bulck, 2023) Additionally, an article stresses the importance of prioritizing research quality over quantity and compared scientific abstracts generated by ChatGPT to original abstracts with a plagiarism detector and blinded human reviewers.

(Hopkins et al., 2023) In a study comparing ChatGPT's responses to Google's feature snippet, the authors found that ChatGPT produced responses of similar quality and content across three health-related questions.

(Graf & Bernardi, 2023) The article suggests that LLMs and other AI technologies need regulation but should be embraced as they can accelerate research and reduce inequalities.

(Arif et al., 2023) experts are concerned about its ability to replace critical thinking and present information redundantly and irrationally. Additionally, using ChatGPT in scientific papers raises ethical concerns, medicolegal and copyright issues, lack of creative thinking and reasoning, methodological biases, and content inaccuracy.

(Morreel et al., 2023) on a multiple-choice family medicine exam. The exam consisted of 47 questions in Dutch language with four possible answers and a pass mark of 62.5%. ChatGPT scored 8/20 when prompted to "give one single answer" and 10/20 when prompted to "rank the possible answers".

(Kung et al., 2023)on the United States Medical Licensing Exam. The study found that even without specialized training or reinforcement, ChatGPT was able to perform at or near the passing threshold for all three exams, with a high level of concordance and insight in its explanations.

(Park et al., 2023) This means that it is crucial to cross-check all information with reliable, peer-reviewed sources.

(Hassan et al., 2023) The authors generated 15 questions related to the history and future potential of AI in surgery, its limitations and challenges in implementation, ethical issues, impacts on the surgical workforce, accountability and autonomy of AI models, and its potential role in patient care. ChatGPT provided thorough and nuanced responses, demonstrating its comprehensive understanding of the current state of AI in surgery and potential opportunities and challenges.

(Anderson et al., 2023) discusses the possibility of artificial intelligence (AI) instantly generating research papers. To test this theory, the authors asked ChatGPT, a natural language model-based AI, to generate two academic papers. Although the resulting essays were produced quickly, they contained inaccuracies in both bibliography and content, raising concerns about plagiarism and ethical issues.

(Anderson et al., 2023) The authors suggest continued manual human checks with topic experts and publishing papers in "free paywalls" to prevent AI from scraping articles.

(Cox et al., n.d.) The findings suggest that ChatGPT-4 can provide quick, safe medical advice to patients seeking blepharoplasty, but its limitations must be recognized, including potential outdated training data and lack of personalized advice.

(Liu et al., 2023) The authors compared the quality of AI-generated and human-generated suggestions and found that both were useful for improving CDS alerts. In fact, out of the 20 suggestions that scored the highest in the survey, nine were generated by ChatGPT. The unique perspectives offered by AI-generated suggestions were highly understandable and relevant, with moderate usefulness, low acceptance, bias, inversion, and redundancy.

(Dergaa et al., 2023) ChatGPT can integrate false or biased information into academic papers, leading to unintentional plagiarism and misattribution of ideas.

**3.3 Accountability Issues (green)**

(Moons & Van Bulck, 2023)

Educational institutions have expressed concern about students using ChatGPT to generate assignments. Fraudulent authors are also a concern as ChatGPT can generate abstracts and even become co-authors, showing the necessity for policies in the publishing industry to guide its use.

(Hopkins et al., 2023) Nevertheless, the results given by ChatGPT was similar to Google Feature Response raised some concerns, such as the lack of references and the possibility of incorrect responses, especially when delivered confidently.

(Ollivier et al., 2023) . The authors of the article discuss options to detect fraudulent manuscripts, including data sharing, improved training and education, and the development of new technology and tools. Blockchain technology has also been proposed to enhance the security and originality of scientific projects, by creating an immutable record and tracking their progress and authenticity, managing intellectual property, securely storing and managing sensitive scientific data, and detecting plagiarism and other forms of scientific misconduct.

(Graf & Bernardi, 2023) Some researchers believe that if ChatGPT is consulted for manuscript writing, it should be listed as an author. However, editors-in-chief of major journals state that authorship entails accountability and consent, which the AI cannot provide.

(Arif et al., 2023) While ChatGPT can help in writing paper content using evidence from online search engines, it lacks the capacity to perform a thorough literature search or critical analysis and discussion of articles. Its existing training data poses an issue in its usage and work credibility, limiting its access to only abstract writing.

(Park et al., 2023) To prevent harm to patients and protect the intellectual property rights of others, thorough evaluation, monitoring, and adherence to ethical guidelines are necessary.

(Anderson et al., 2023) discusses the possibility of artificial intelligence (AI) instantly generating research papers. To test this theory, the authors asked ChatGPT, a natural language model-based AI, to generate two academic papers. Although the resulting essays were produced quickly, they contained inaccuracies in both bibliography and content, raising concerns about plagiarism and ethical issues.

(Dergaa et al., 2023) LLMs pose the risk of not citing original sources or authors, leading to inadvertent misattribution of information. To address these concerns, researchers must take responsibility for thoroughly fact-checking their work, integrate expert-driven fact-checking and verification processes, and encourage the development and implementation of open-source AI technology. they propose the development of a plagiarism checker similar to an NLP pattern checker to help detect text generated by LLMs, thereby helping editors and publishers detect potential issues.