Graduate School of Science and Technology Master's Thesis Abstract

Laboratory name (Supervisor)	Social Computing (Eiji Aramaki（Professor）)		
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Thesis title	A Natural Language Processing and Time-Series Analysis Approach to the Global Trends of Medical Research Publications		

Abstract

This study investigates global trends in medical research publication from 2016 to 2022. A comprehensive dataset of PubMed abstracts was utilized, the research examined the global trends in medical research, with a focus on the mentioned diseases and drugs. In addition the research examines geographical trends around the world by investigating how the different six continents contribute to medical research based on their publication efforts. Our method used Natural Language Processing (NLP), specifically Named Entity Recognition (NER), and time-series analysis for a detailed and efficient extraction of relevant medical entities and trends. The key findings highlight shifts in the frequency of diseases and drugs mentioned, with a focus on the impact of major health events such as the COVID-19 pandemic. The geographical analysis highlighted research contributions from different continents, with Asia leading in publication volume and North America in publications per capita. This study provides insights into the evolving land- scape of medical research from the short selected period and response toward global health challenges.