



# At The Cutting Edge of Cardiology: A Bibliometric Analysis of Most Cited Articles on Intelligence in Cardiovascular Medicine

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## INTRODUCTION

The integration of AI-driven technologies, such as machine learning and deep learning algorithms, into cardiology practice has the potential to improve patient outcomes, optimize clinical workflows, and reduce healthcare costs. Despite the growing body of research, the global landscape of AI-related publications in cardiology remains inadequately explored. Our study aims to map the publication patterns and evaluate the impact of AI-focused research in the field of cardiology.

## METHODS

No Institutional Review Board approval was needed for our study as it was a retrospective evaluation of publicly available data. Scopus Library database ([www.scopus.com](http://www.scopus.com)) and Web of Science were searched in September 2024 for all articles primarily focusing on Cardiovascular Medicine and Artificial Intelligence using the relevant Mesh Terms. Articles were ranked by citation count and screened by two independent reviewers. The analysis of the most prominent authors, countries, publishers, and journals was performed using Microsoft Excel.

## RESULTS

The citations of the top 100 cited articles ranged from 104 to 819 as of September 2024. >50 articles were published by authors from the USA, followed by 9 articles from the UK, 5 from Japan, and 4 from South Korea. The most common institutional affiliations of the senior authors were Mayo Clinic (5 articles in the top 100), Cedars Sinai Medical Center, Yale University, Stanford University, Harvard Medical School, and Weil Cornell/New York Presbyterian. Slomka P. J. from Cedars Sinai Medical Center and Friedman P. A. from Mayo Clinic were noted to be among the most prominent senior authors. While European Heart Journal, Computers in Biology and Medicine and Journal of American Heart Association were noted to be the Journals with the most number of articles in the top 100 most cited on this topic.

## CONCLUSION

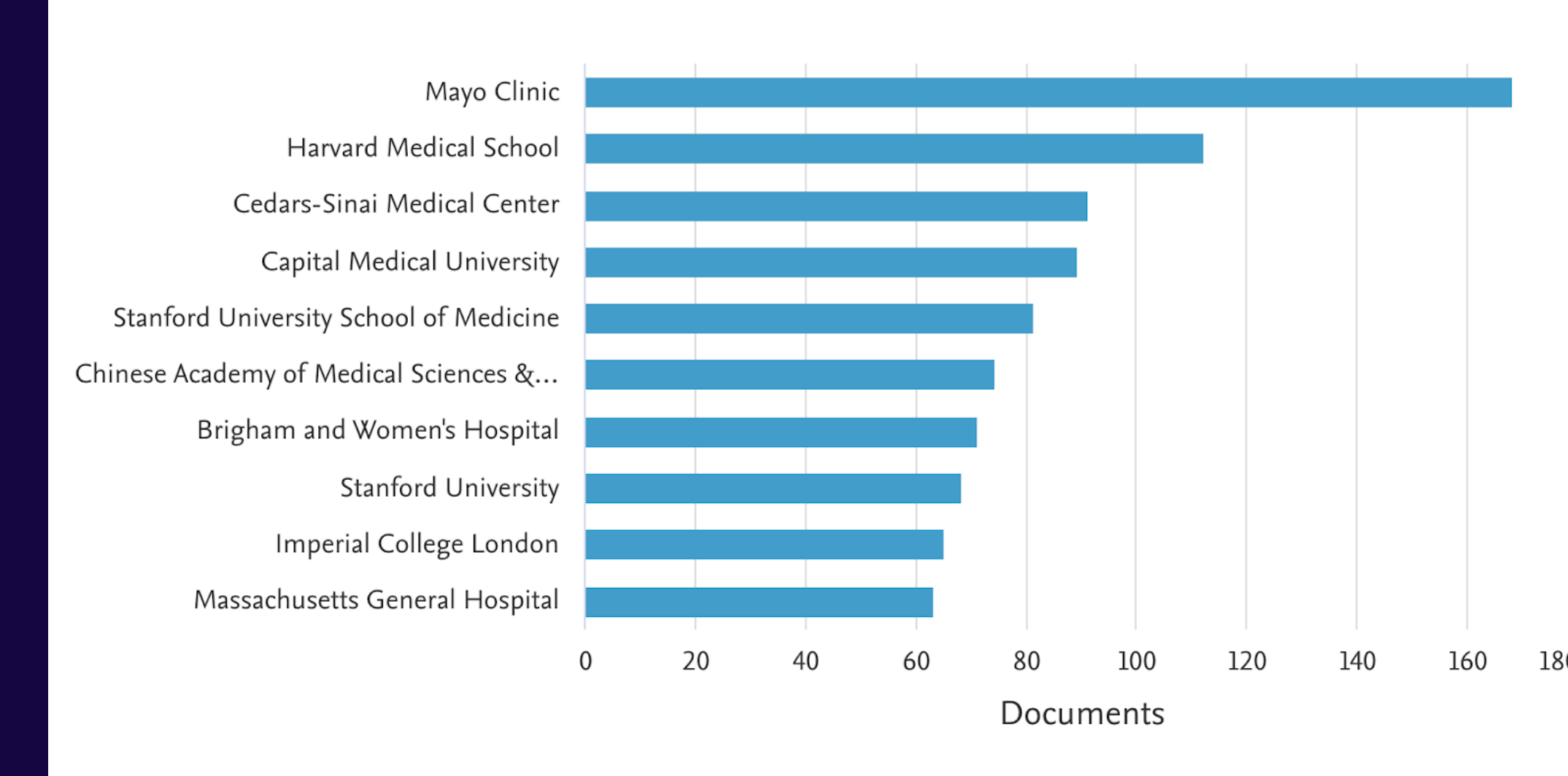
Our study provides insight into the characteristics and quality of the most highly cited literature on AI use in Cardiovascular Medicine and a list of the most influential references.

### Clinical Implications:

This bibliometric analysis highlights the leading contributions in AI research within cardiovascular medicine, emphasizing the influence of key institutions and countries in shaping the field. By identifying the most impactful studies, researchers and clinicians can prioritize foundational literature that guides the application of AI-driven tools in clinical practice. As AI continues to evolve, understanding the trends and gaps in the current literature will help focus future research efforts, ultimately accelerating the adoption of AI technologies that improve patient outcomes, streamline workflows, and reduce healthcare costs in cardiology.

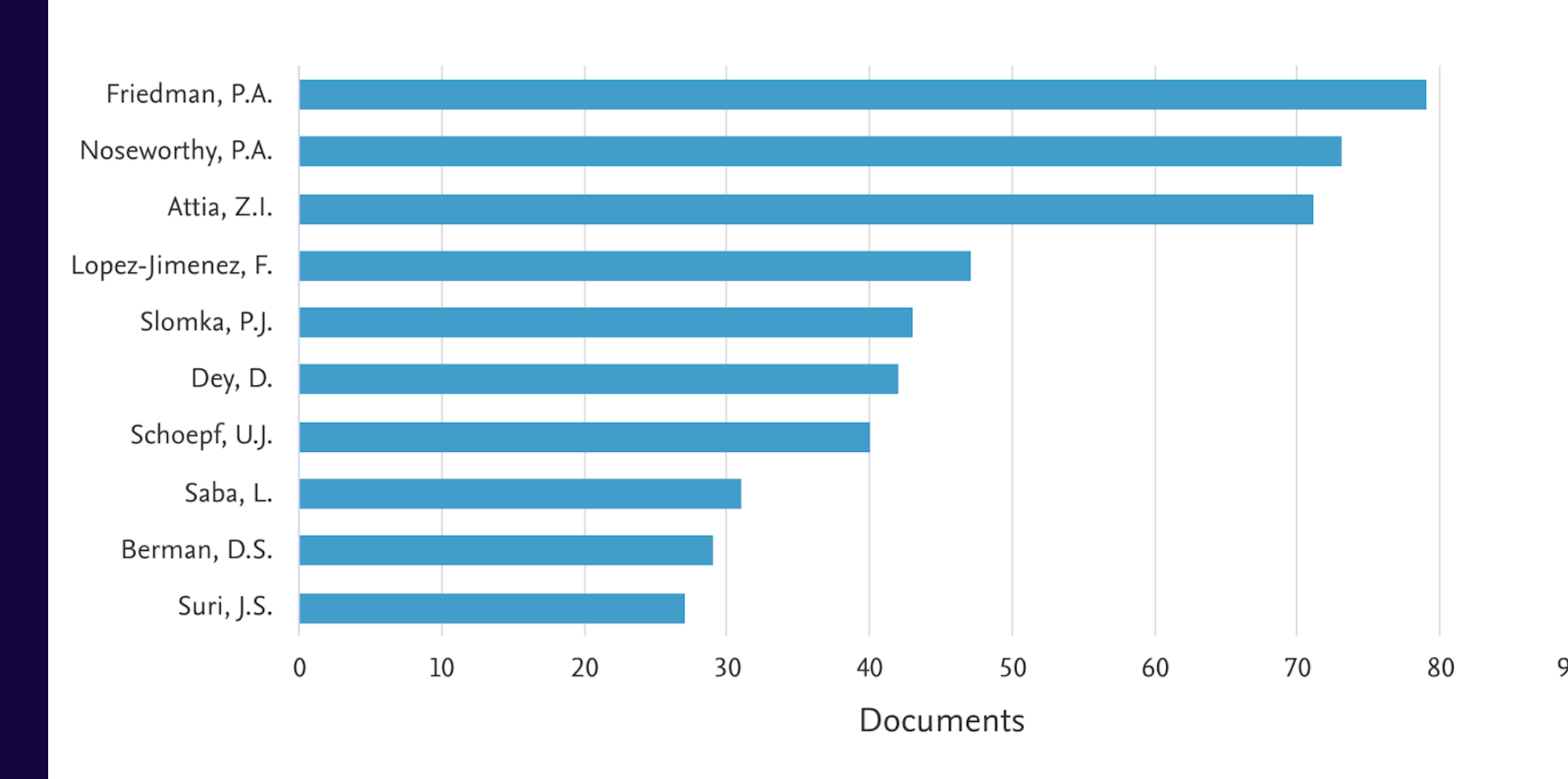
Documents by affiliation

Compare the document counts for up to 15 affiliations.



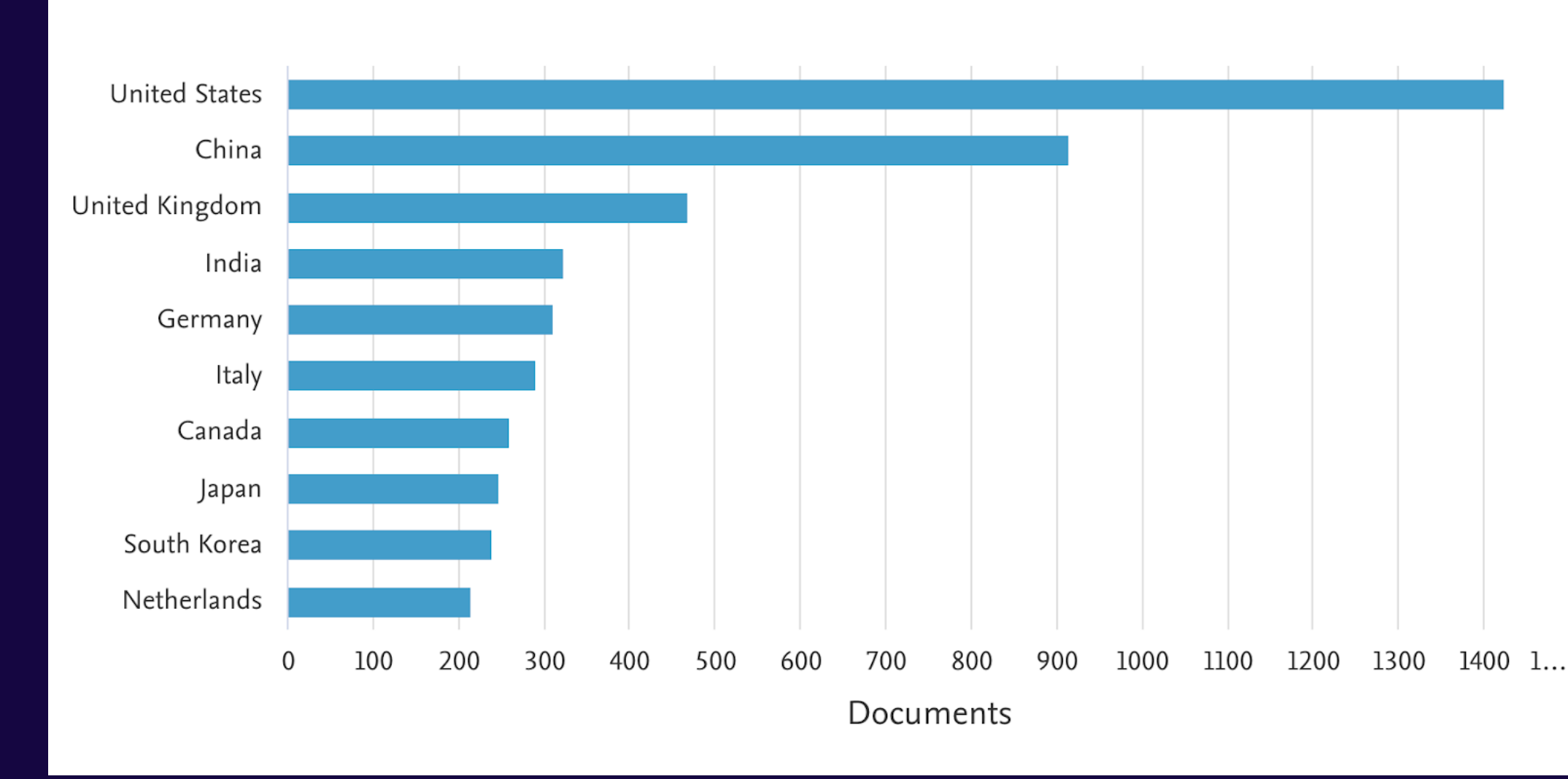
Documents by author

Compare the document counts for up to 15 authors.

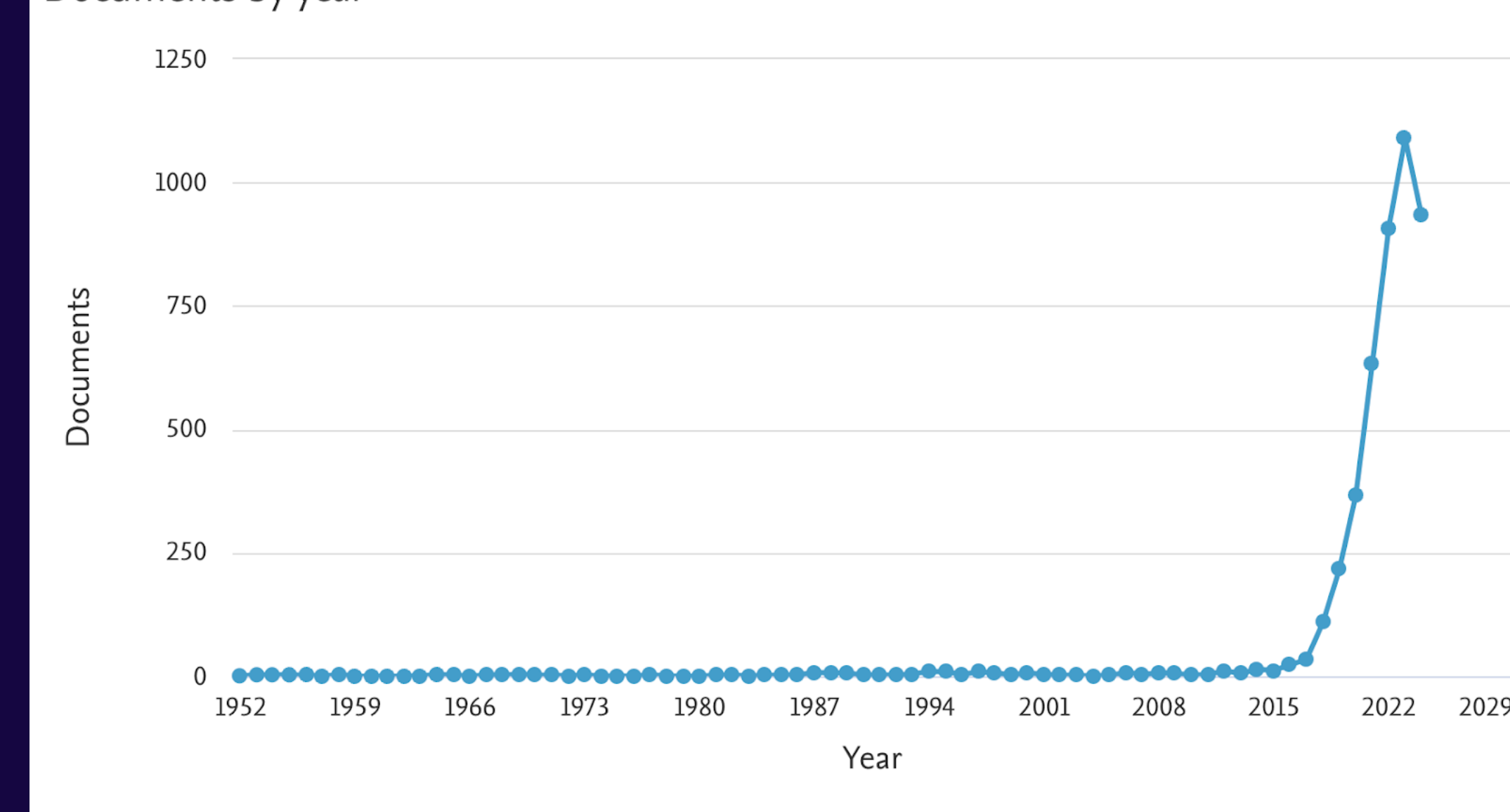


Documents by country or territory

Compare the document counts for up to 15 countries/territories.



Documents by year



Among Top 100 most cited articles:

Affiliation of Senior Author	Number of Articles
Mayo Clinic	5
Cedars-Sinai Medical Center	5
Yale University	4
Stanford University	4
Harvard Medical School	3
Weill Cornell/ New York Presbyterian	3
Oxford University	3
University of California Los Angeles	3
Icahn School of Medicine at Mount Sinai	2
University of Toronto	2
West Virginia Heart and Vascular Institute	2
Imperial College London	2
University College London	2
Yonsei University	2

Journal Name	Count
European Heart Journal	6
Computers in Biology and Medicine	6
Journal of the American Heart Association	5
Radiology	5
BMC Medical Informatics and Decision-Making	4
Computer Methods and Programs in Biomedicine	4
JACC: Cardiovascular Imaging	4
Circulation	3
European Journal of Heart Failure	3
JAMA Cardiology	3
Journal of Cardiovascular Computed Tomography	2
The Lancet	2
Journal of Nuclear Medicine	2
Circulation: Cardiovascular Imaging	2
Circulation: Arrhythmia and Electrophysiology	2
Artificial Intelligence in Medicine	2
Journal of Nuclear Cardiology	2
Circulation Research	2
Journal of the American College of Cardiology	2
European Radiology	2
The Lancet Digital Health	2

