Jamaican Youth through Empowerment & Training Project

citibeats

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Jamaica's Digital Skills Indicator - (June 2023)

This report is the third publication to share insights from the JET Project, a citizen listening tool co-created and led by Trust For The Americas and Citibeats gathering data from 2021-2023 related to the demand for digital skills in Jamaica.

The adoption of digital technologies is transforming the global economy and the labor market impacting the way people learn and work. To meet current and evolving industry demands, young people need relevant skills. The situation is particularly challenging for low-income and under-employed youth in developing economies in the Caribbean, who face significant and particular obstacles in order to have access to quality education, training, and decent job opportunities. The objective of the JET Project is to provide data-driven and relevant training programs to prepare Jamaican youth for the technical demands of the digital economy impacted by the wave of technological innovations. The collection of this data is powered by the Employment & Skills Monitor created for the JET Project, which helps identify labor market trends in real-time and quickly develop programs that respond to the job market needs combining Natural Language Processing and Machine Learning technology to filter relevant content, classify user opinions and information into categories, and to extract insights and patterns automatically.

This is the third edition of the release of updates, which now incorporates new sectors and themes such as a new cross-sectional analysis that covers the supply and demand for digital skills in the **educational sector**, and a new category including information regarding the **maritime sector** in Jamaica. The analysis of the maritime sector overviews the digital skills that are in demand within this industry to explore its potential for new job opportunities.

The Methodology

Through Citibeats ethical Artificial Intelligence algorithm, thousands of citizen opinions posted online are collected, processed, and visualized, helping decision-makers monitor the digital skills within the Jamaican labor market, and identifying actionable insights, such as gaps and opportunities. This unstructured data comes from digital platforms like social media, discussion forums, articles, and blog posts.

The Employment & Skills Monitor has been tailored to the specific needs of the Jamaican ecosystem and helps identify growing conversations and trends covering the top digital skills demanded in Jamaica. Up to this point the monitor has collected over 82,000 opinions and 279,000 voices from **10 countries' datasets** (in English) from:

- **Jamaica**
- **United Kingdom (Remote opportunities)**
- **United States (Remote opportunities)**
- **Trinidad & Tobago**
- **Saint Vincent**
- **Saint Lucia**
- **Barbados**
- **Bahamas**
- **Belize**
- **Dominica**
- **Antigua and Barbuda**

The Employment & Digital Skills Monitor has 11 categories in the scope of its analysis, for the previously mentioned datasets.

Digital Foundation Skills:

Digital foundation skills refer to a set of essential competencies that enable individuals to effectively navigate and participate in the digital world.

Software Management:

Software management refers to the set of digital skills and practices involved in the planning, development, deployment, and maintenance of software applications.

Social Media:

Set of digital competencies required to effectively use social media platforms for personal, professional, or organizational purposes.

Data Analytics:

Data analytics skills are the set of digital competencies required to effectively collect, process, analyze, and visualize data.

Programming, Web and App Development:

Refer to the set of digital skills involved in designing, creating, and maintaining software applications.

Digital Image and Video Editing

Digital image and video editing skills refer to the set of competencies involved in manipulating, enhancing, and creating visual content using digital tools and software.

Digital Business:

Refer to the set of competencies involved in leveraging digital technologies and tools to transform business processes, operations, and strategies.

Cybersecurity:

Refer to the set of competencies involved in protecting digital systems, networks, and data from unauthorized access, theft, or damage.

Design:

Refer to the set of competencies involved in creating and manipulating digital visual content for a variety of purposes.

Artificial Intelligence:

Refer to the collection of competencies involved in designing, building, and implementing intelligent systems that can learn, reason, and perform tasks.

Maritime software:

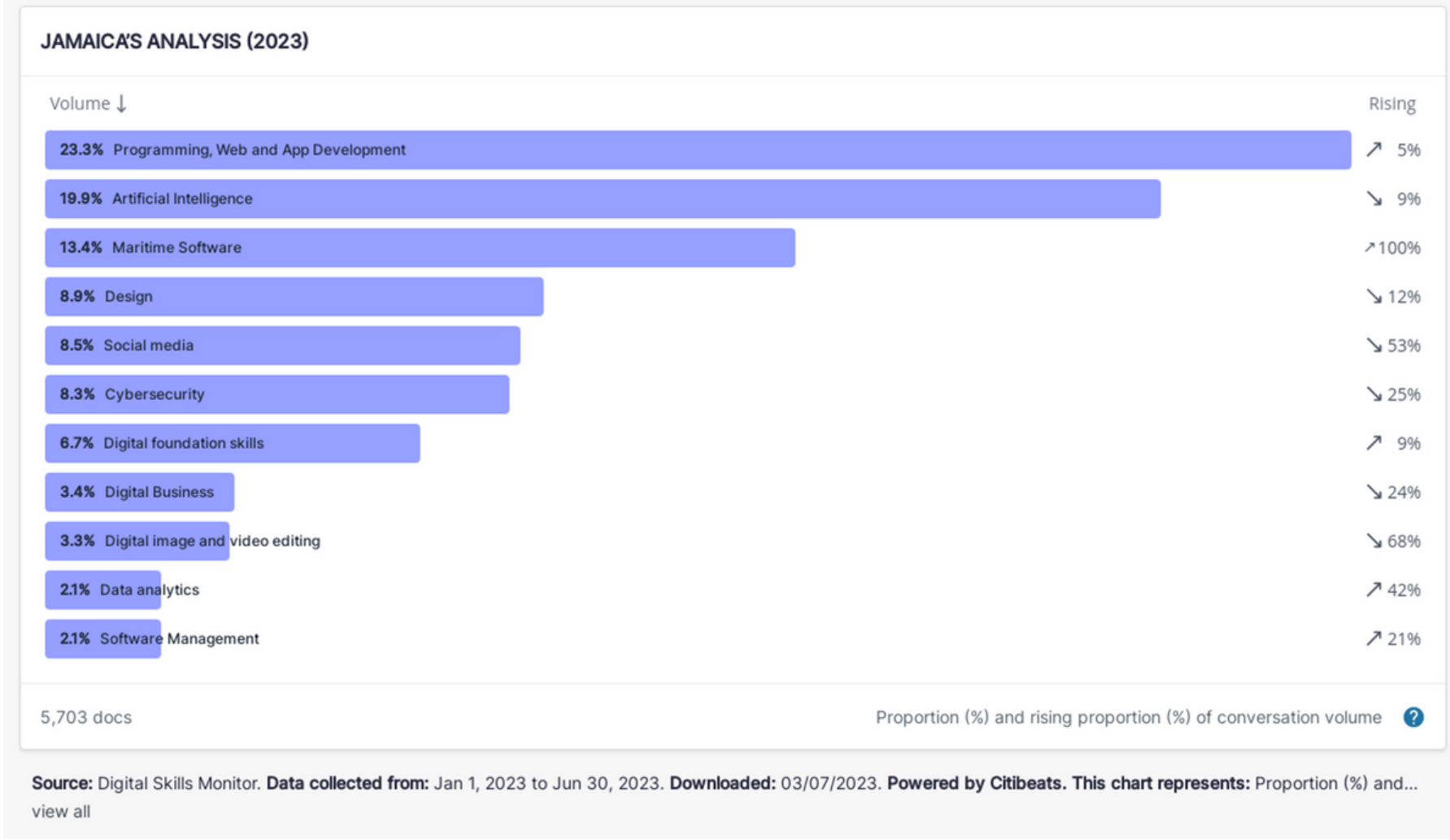
Digital skills related to the maritime industry.

The sources of the unstructured data gathered include:

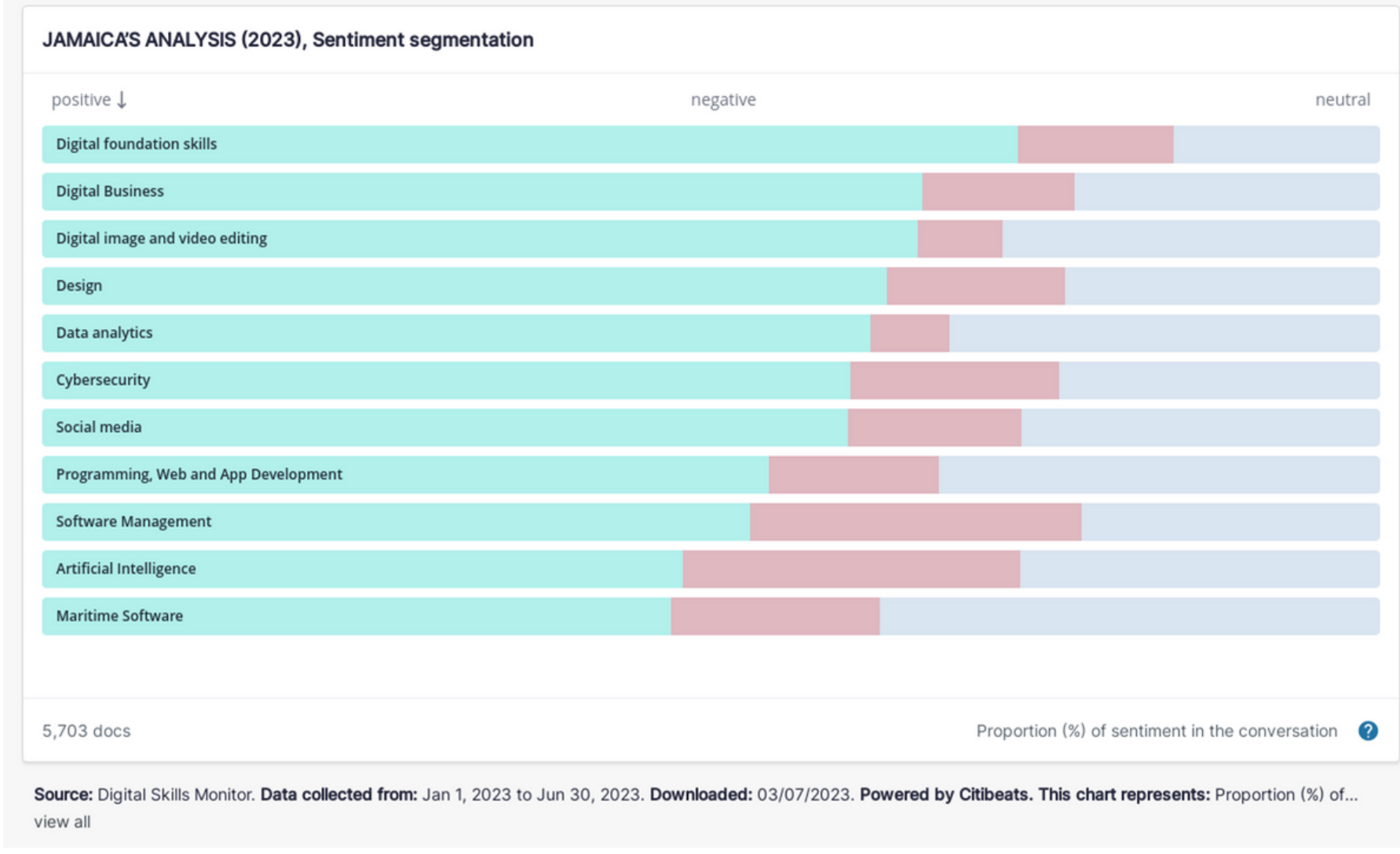
- **Websites**
- **Forums and Blogs (and comments)**
- **News articles (and comments)**
- **Youtube comments**
- **Reddit**
- **Twitter**
- **Facebook pages**

Jamaica's Analysis

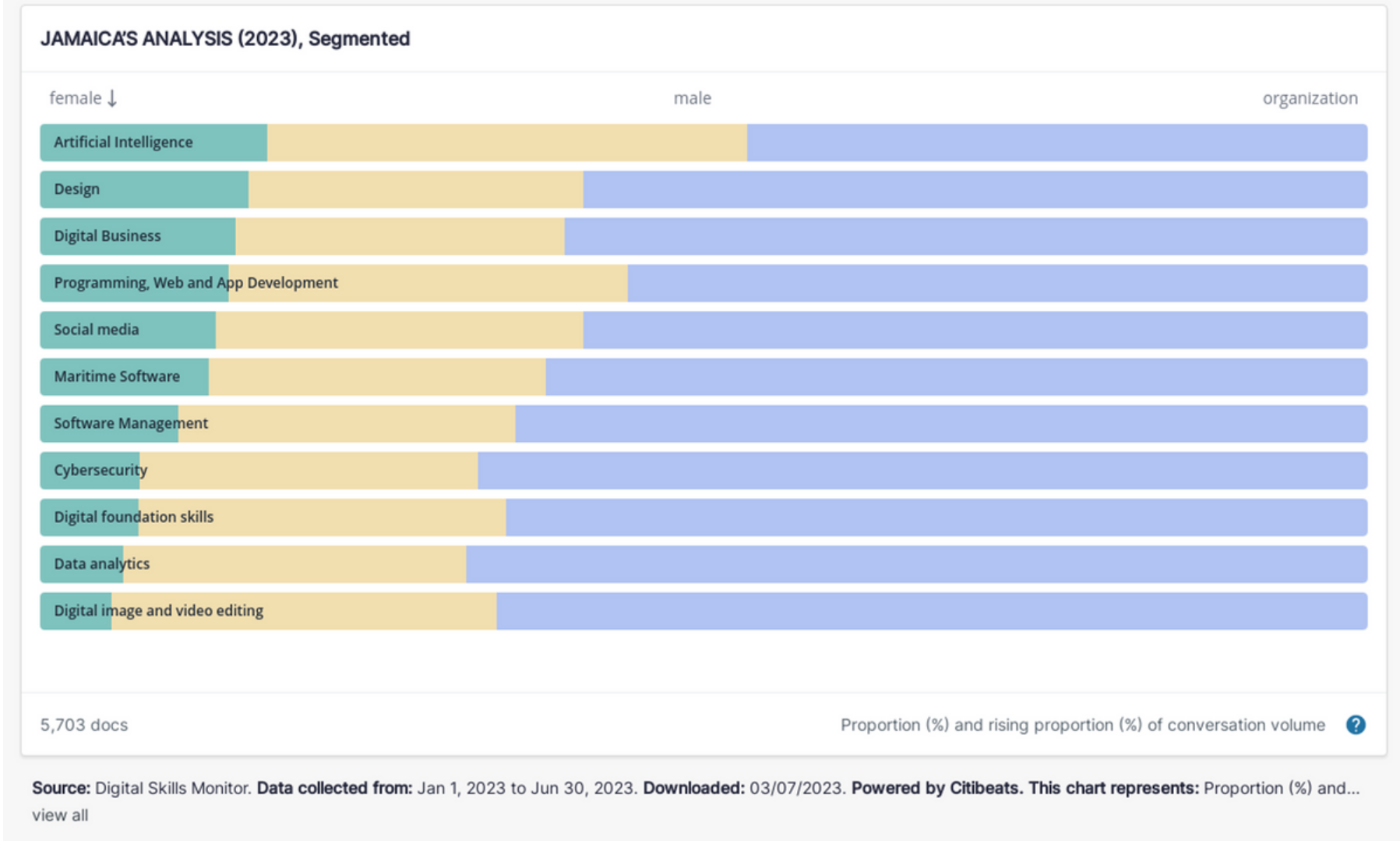
The analysis for Jamaica compends data gathered from January 2023 to June 2023, which contained 5.7 thousand documents from 2.3 thousand different voices. The first graph shows that the digital skills that have grown the fastest, compared to our previous analysis (from July 2021 to early January 2023), are Digital image and video editing. Now, Maritime Software is incorporated in the 3rd position of the primary digital skills-related needs published in Jamaica.



Using the algorithm of Citibeats, we can use the feature of sentiment analysis to process the text and determine if the emotional tone of the message is positive, negative, or neutral. In the following graph, you can see how this data is represented in such terms for each digital skill.



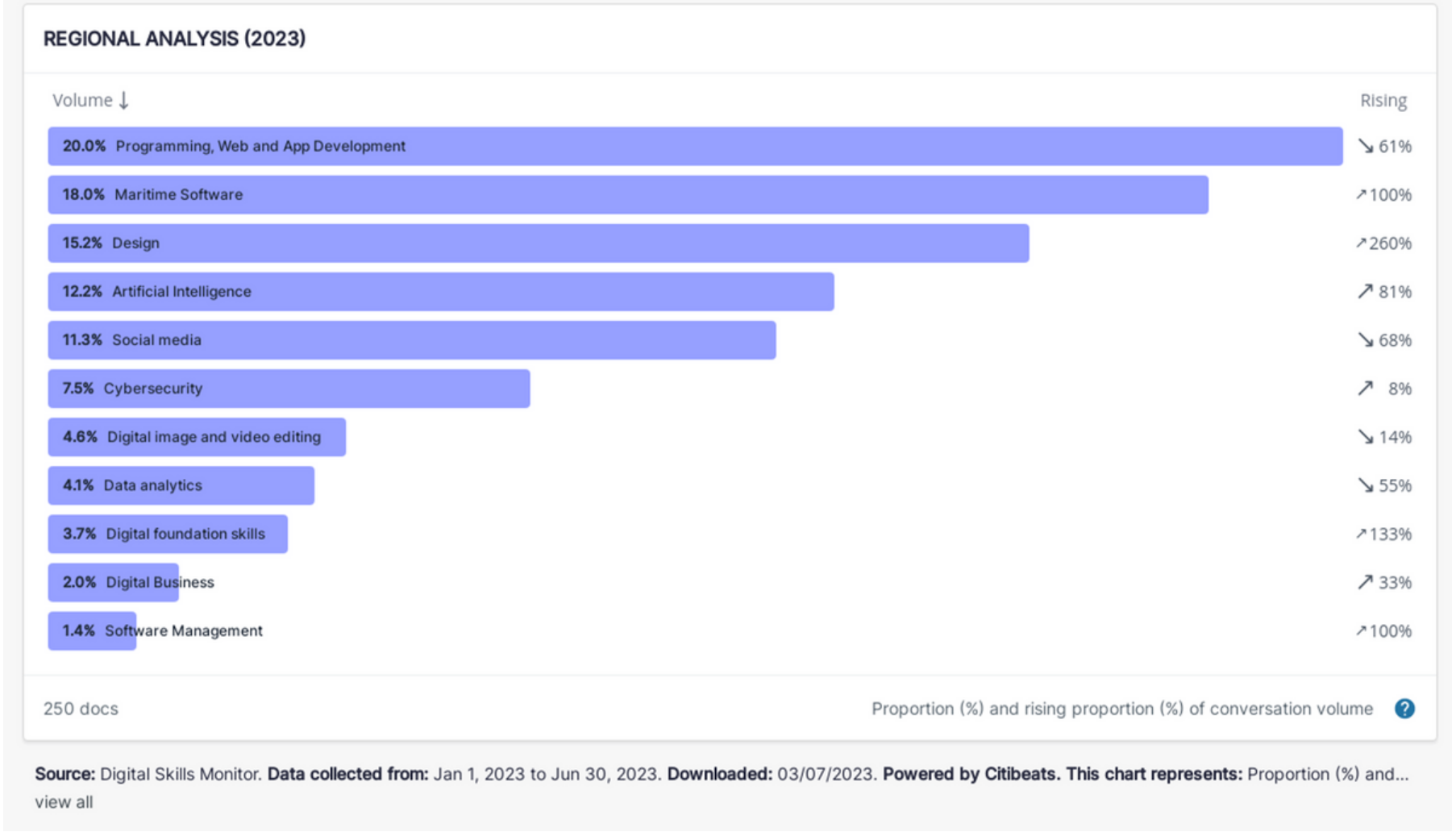
Lastly, a newly feauture incorporated in the Citibeats algorithm, allows us to look at the distribution of the data collected, letting us see if the data comes from a female, male, or an institution/organization.



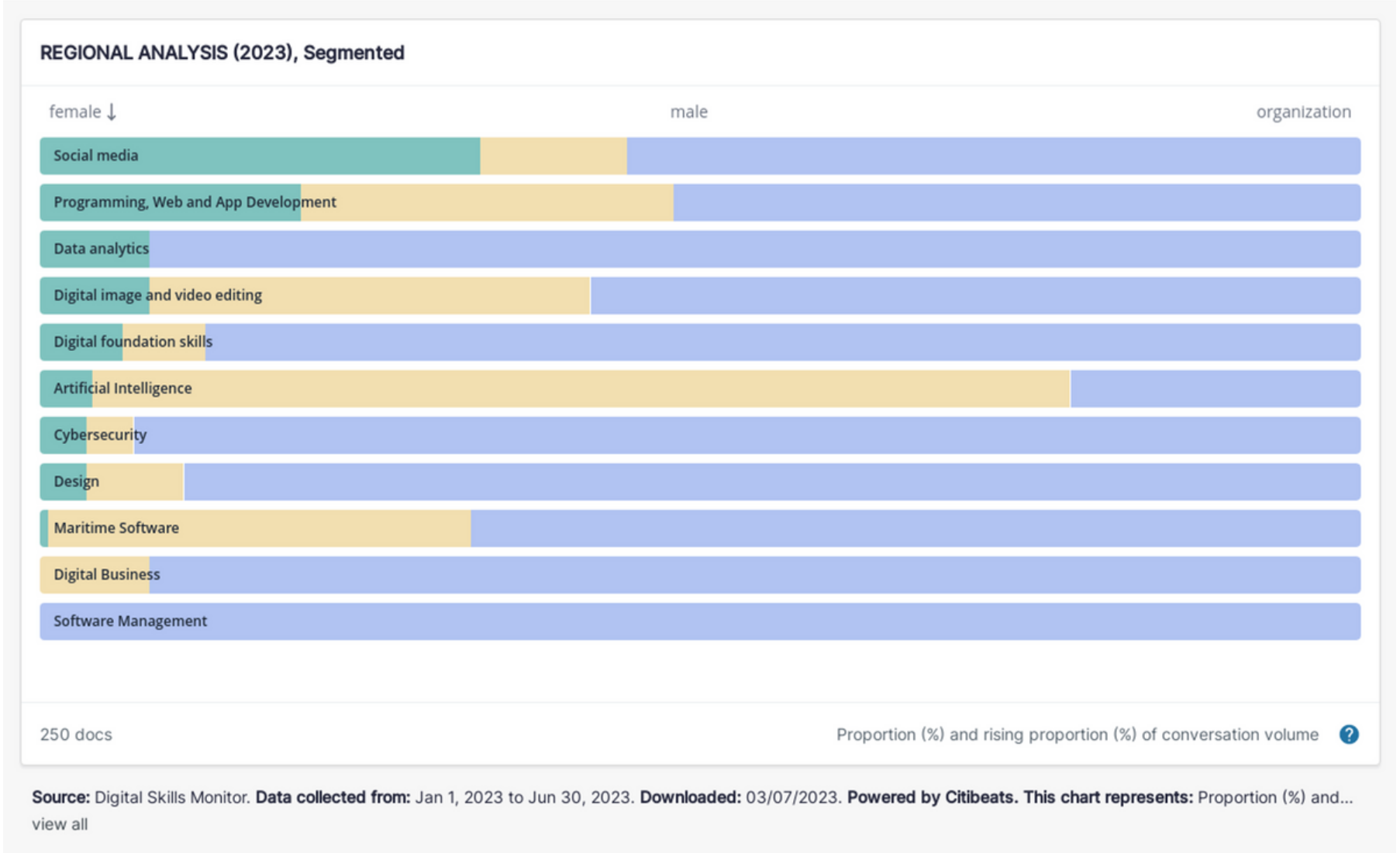
Overall, this Monitor has collected Jamaican data from July 2021 to June 2023, processing the quantity of **22.22 thousand documents,** distributed in **7.28 thousand voices.**

Caribbean Analysis

For the regional analysis of the Caribbean, we have excluded data from Jamaica to be able to analyze the region without Jamaica's data influencing the results, since there is more data about Jamaica than the rest of the countries. These results processed data from January 2023 to June 2023, including **250 documents** and **132 voices.**



This data is composed from the following population categories shown in the graph below.

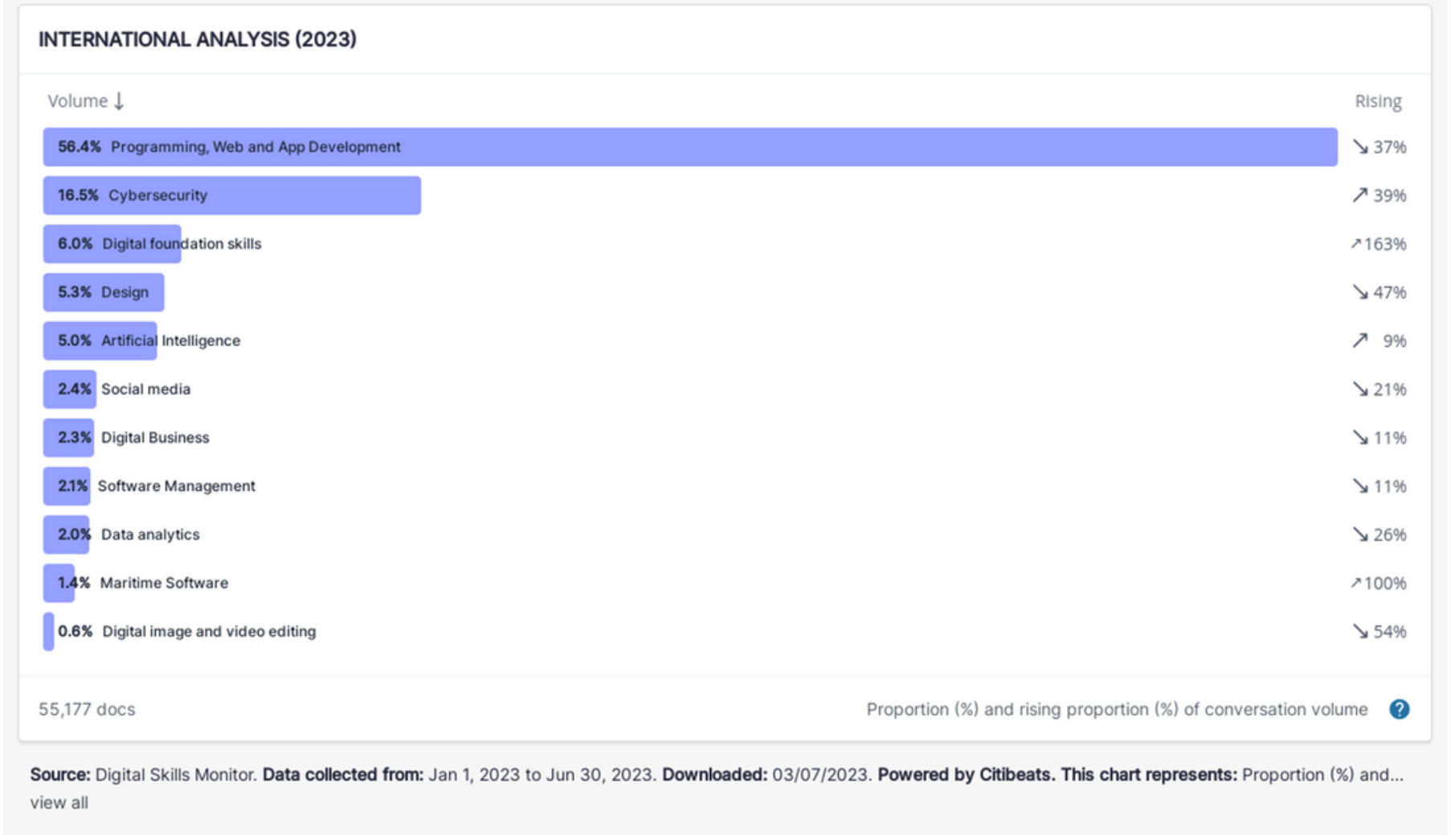


And for the totality of data that we have been able to capture and analyze from the Caribbean (from the period of July 2021 to June 2023), we have **1.7 thousand** documents and **327 voices**. The overall analysis for the data of 2021-2023 is shown below, where one of the main contrasts is that for the region of the Caribbean "Design" is shown as the second highest-mentioned digital skill.

International Analysis

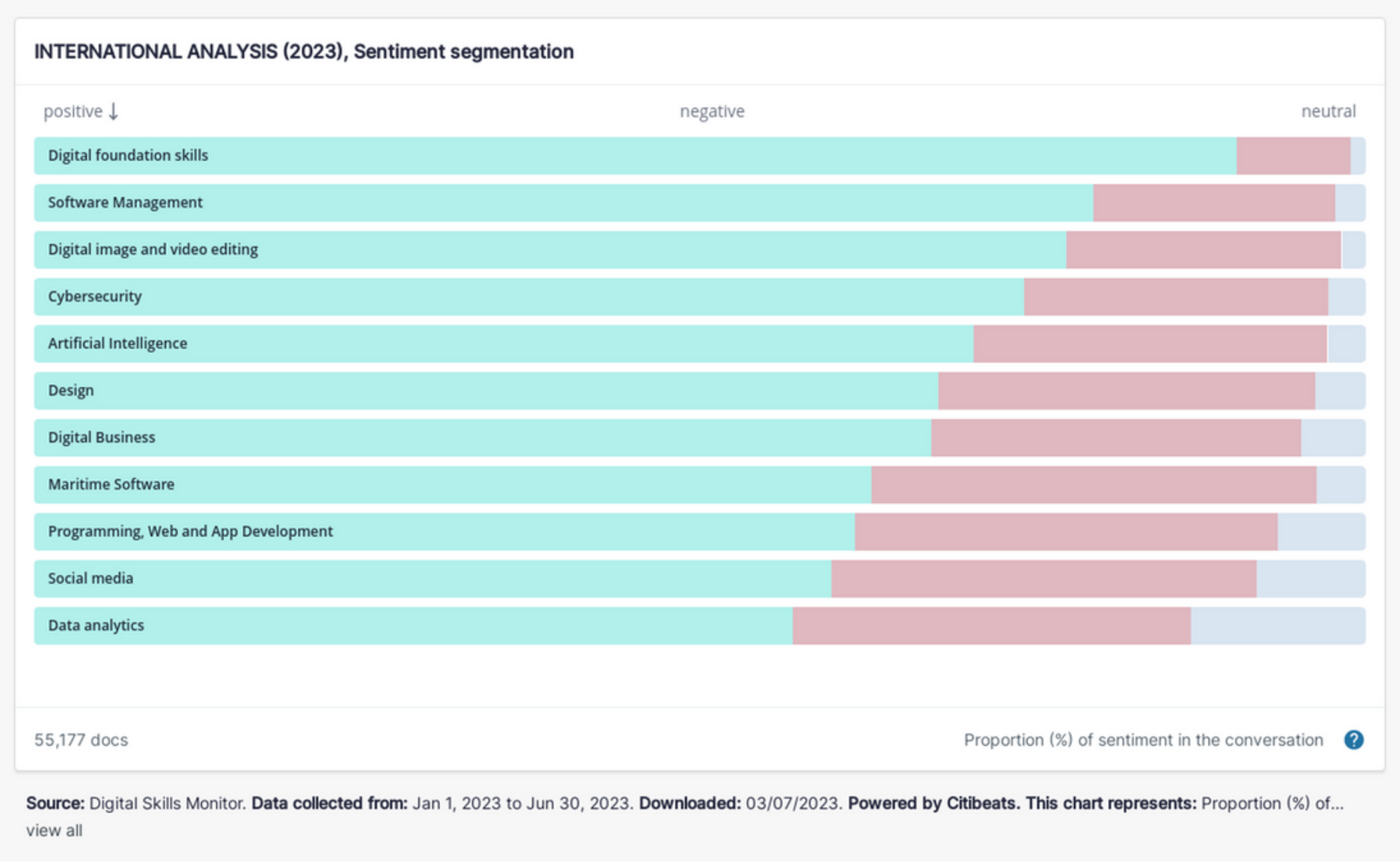
(United States & United Kingdom remote job opportunities)

For the Employment & Skills Monitor, remote job opportunities in the area of digital skills hold high potential for young Jamaicans. Therefore, the analysis integrates data from the United States (US) and the United Kingdom (UK), focusing on the remote opportunities that those countries could offer Jamaicans. The data collected for the following graph includes data from January 2023 to June 2023, with **55.2 thousand documents** and **19 thousand voices.** One of the main things contrasted from the international scenario compared with Jamaica is how for UK and US "Programming, Web and App Development" remains the first digital skill, but the two that follow change to be "Cybersecurity" and "Digital foundation skills".



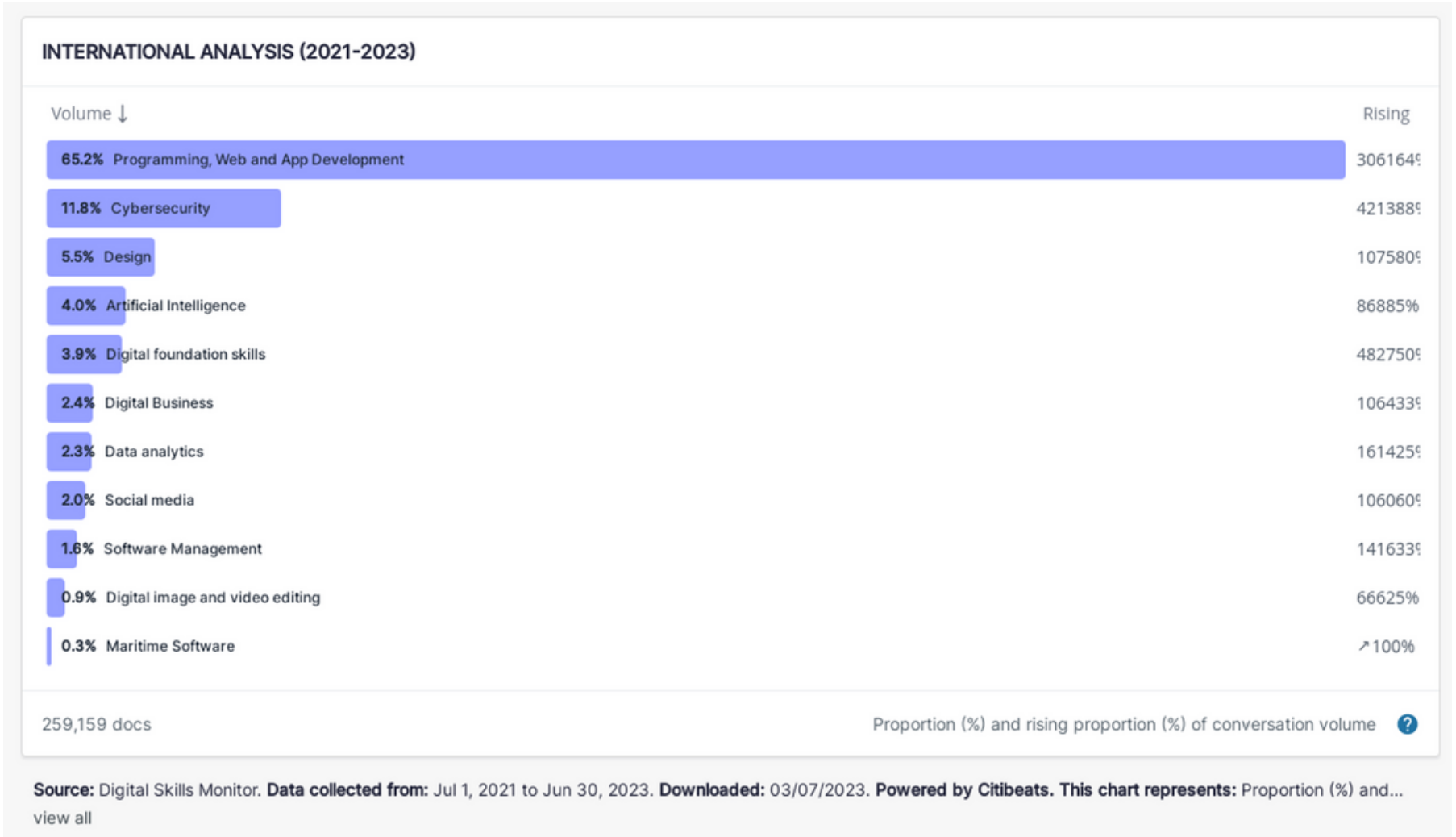
Source: Digital Skills Monitor. **Data collected from:** Jan 1, 2023 to Jun 30, 2023. **Downloaded:** 03/07/2023. **Powered by Citibeats. This chart represents:** Proportion (%) and...
view all

For the international ecosystem, the sentiment analysis shows the following graph.



International data is composed from the following population.

For the overall project of the Employment & Skills Monitor, the international (the UK and the US) data captured from July 2021 to June 2023 gathers **259.2 thousand documents** and **76.4 thousand voices.**



What Makes the Employment & Skills Monitor Different From Other AI-Powered Tools

Citibeats platform not only makes sense of data but also identifies social facts and trends interpreting the needs and opinions of users adapting to the context in which they are expressed, the needs of the language, the data source, and the structure of the text.

The algorithms use key principles, such as:

- **Privacy first: Turns private and sensitive text into aggregated and anonymized outputs.**
- **Data representativity: Compares demographic differences and controls for biases.**
- **Monitors the distribution of the data between the different categories.**
- **Seeks for quality of the classified data.**

Demographic Indicators

The monitor is represented by

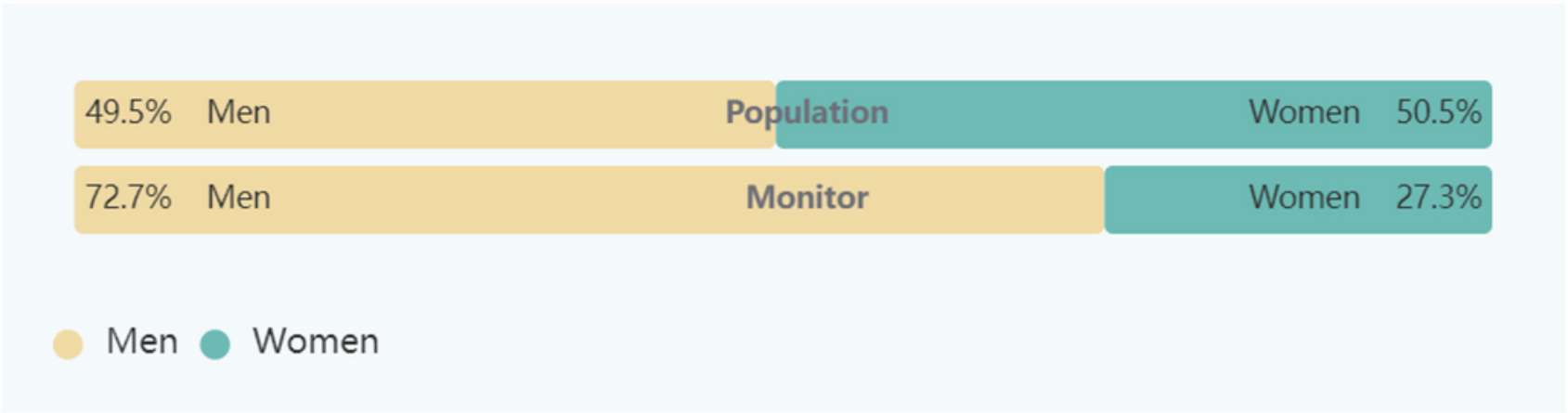
Opinions	Voices
283.24K	**83.83K**

Total number of analysed documents and authors in the selected location and time period.

Composed in the following way:

- **82.93%** of Citizens' voices
- **17.07%** of Institutions' voices

Gender profiling



Comparison of the percentage of male and female, in the selected location and time period. Citibeats recognizes that female and male are not the only genders.Source: Citibeats monitor data is calculated using the gender profiling algorithm in the documents with detected demographics. Population by gender from https://data.worldbank.org/indicator

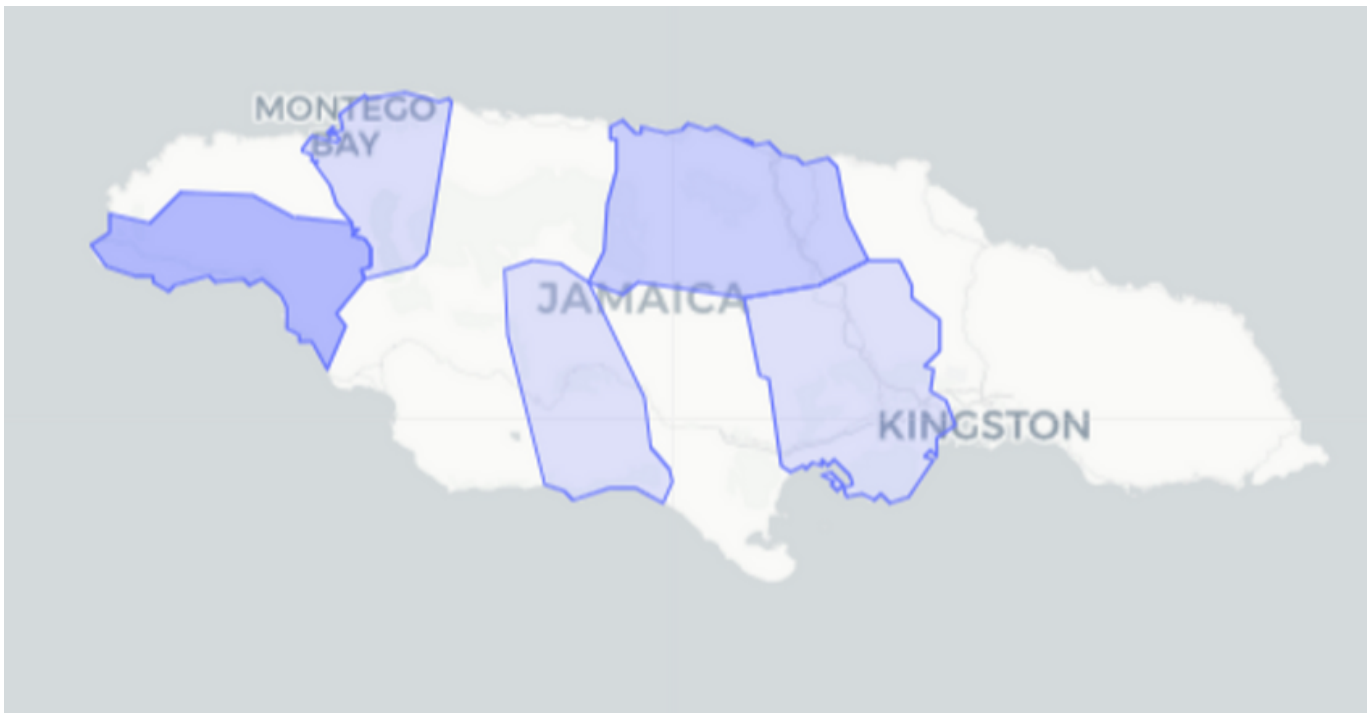
In conclusion, this report from the Employment & Skills Monitor highlights both the opportunities and challenges that lie ahead for Jamaican youth. It is evident that the job market is rapidly evolving, driven by technological advancements, automatization, changing job opportunities, and shifting demographics. While this transformation brings great potential for economic growth and prosperity, it also poses significant risks, particularly for our youth. We must ensure policies that help Jamaican youth secure, or create, decent and sustainable employment opportunities.
Empowering the next generation will lay the foundation for a prosperous and sustainable future for Jamaica and the wider Caribbean region.

Appendix

Maritime Sector subregional analysis for Jamaica.

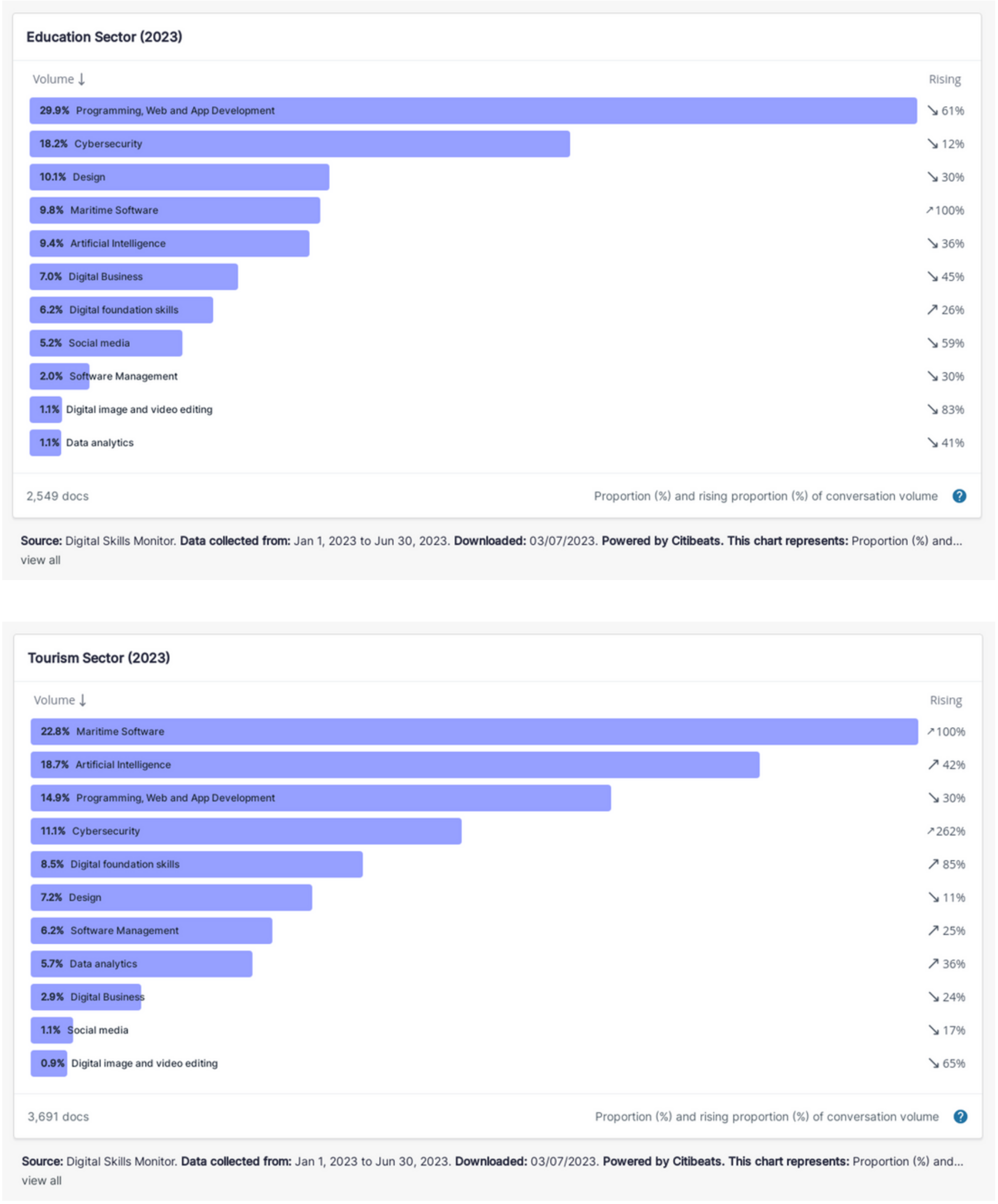
- **Westmoreland 50%**
- **Saint Ann 28.6%**
- **Saint James 13.8%**
- **Saint Catherine 11.6%**
- **Manchester 13.3%**

Maritime Sector conversations distributed by sub-region by the parishes of Jamaica are shown below.

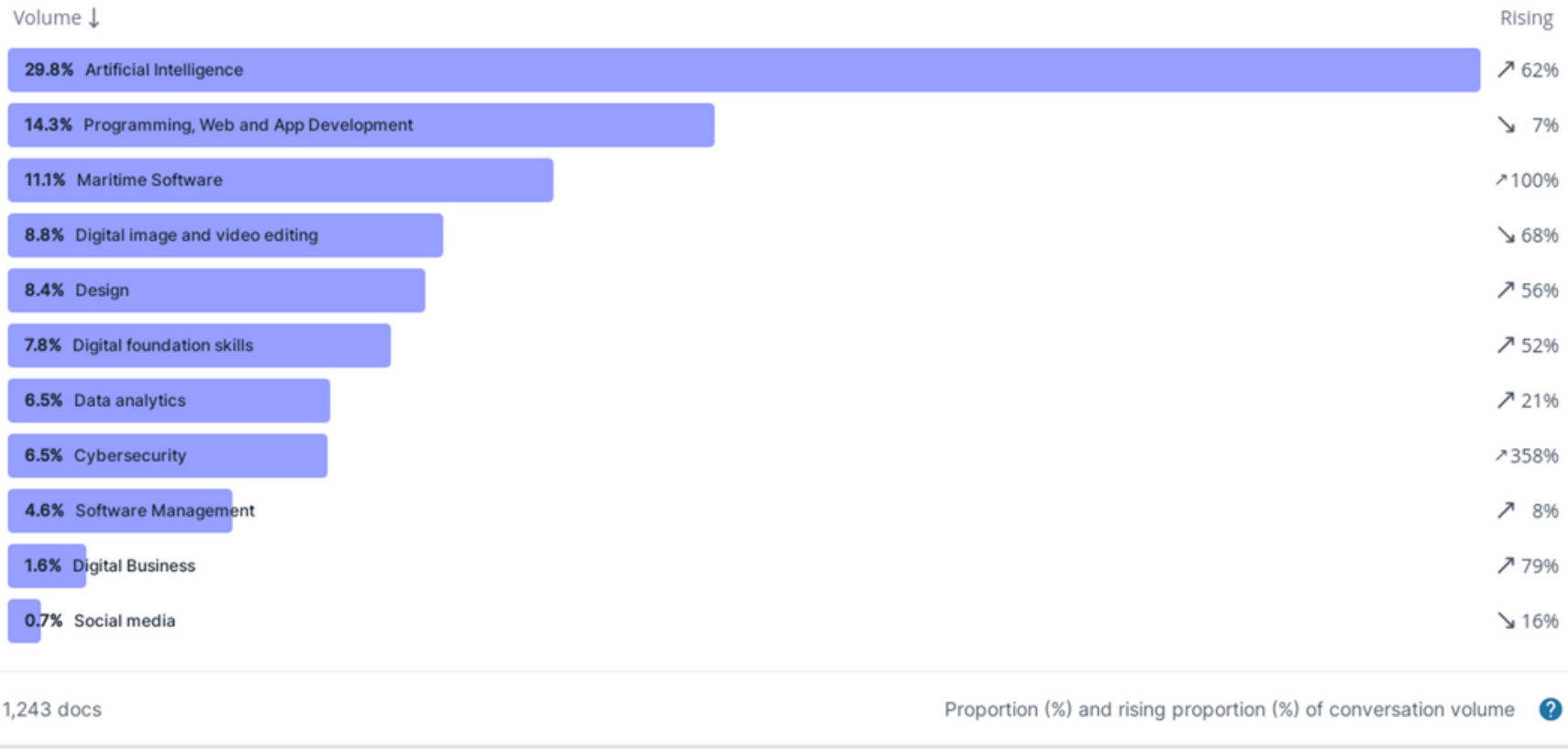


The two newly incorporated sectors have been analyzed in terms of the digital skills of each one. Starting with the Maritime Sector.

Followed by the Education Sector.



Agriculture and food processing Sector (2023)

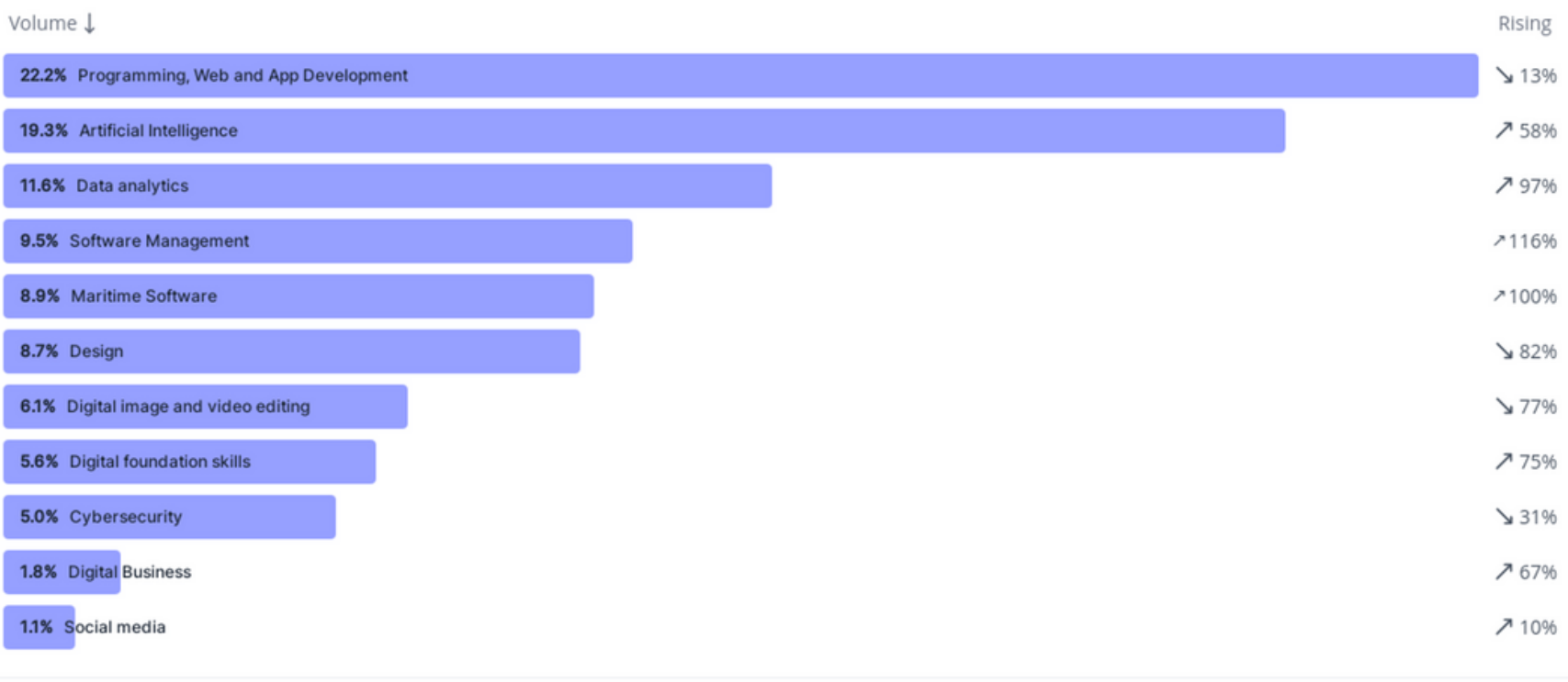


1,243 docs

Proportion (%) and rising proportion (%) of conversation volume

Source: Digital Skills Monitor. **Data collected from:** Jan 1, 2023 to Jun 30, 2023. **Downloaded:** 03/07/2023. **Powered by Citibeats. This chart represents:** Proportion (%) and...
view all

Mining Sector (2023)



2,433 docs

Proportion (%) and rising proportion (%) of conversation volume

Source: Digital Skills Monitor. **Data collected from:** Jan 1, 2023 to Jun 30, 2023. **Downloaded:** 03/07/2023. **Powered by Citibeats. This chart represents:** Proportion (%) and...
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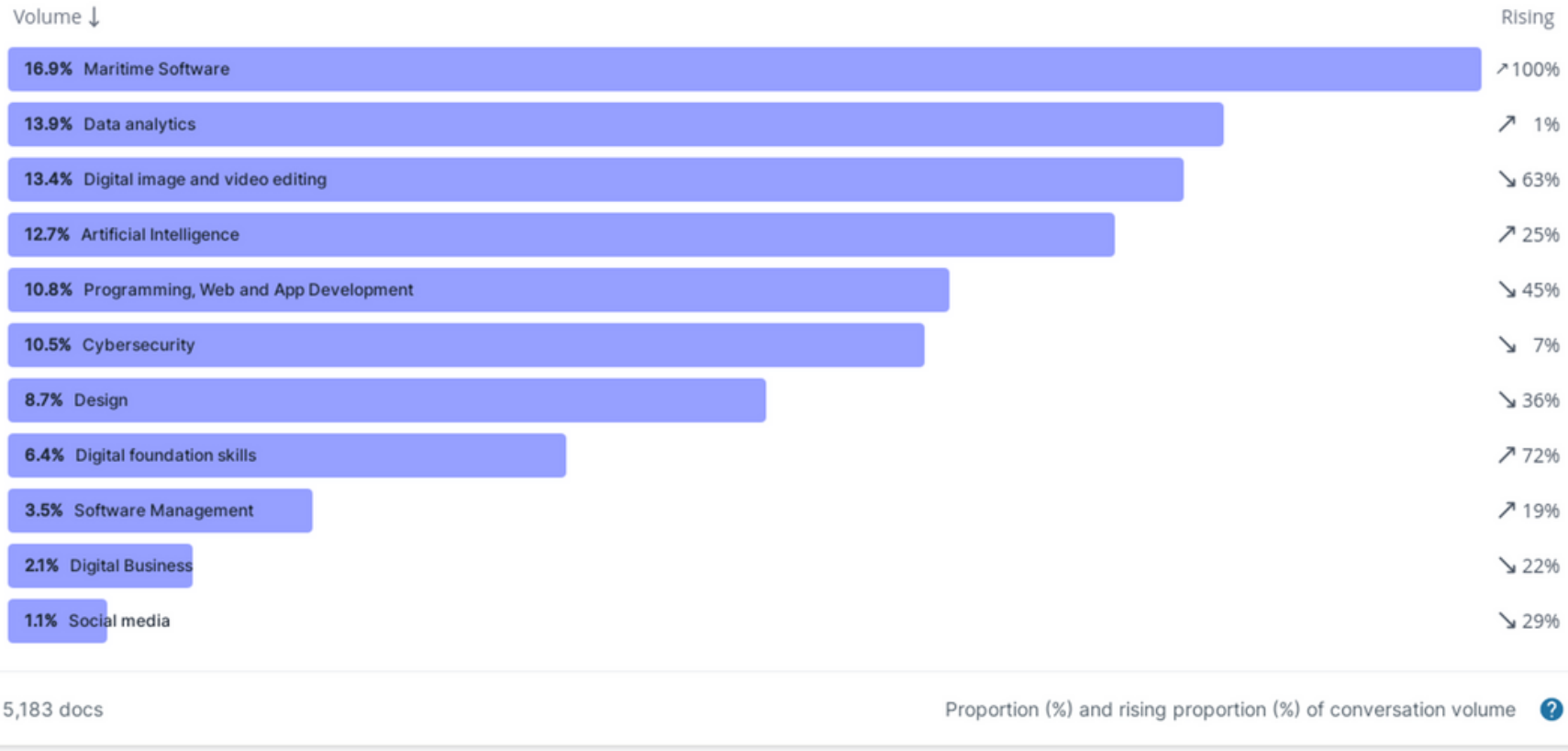
Manufacturing Sector (2023)



5,183 docs

Proportion (%) and rising proportion (%) of conversation volume

Source: Digital Skills Monitor. **Data collected from:** Jan 1, 2023 to Jun 30, 2023. **Downloaded:** 03/07/2023. **Powered by Citibeats. This chart represents:** Proportion (%) and...
view all

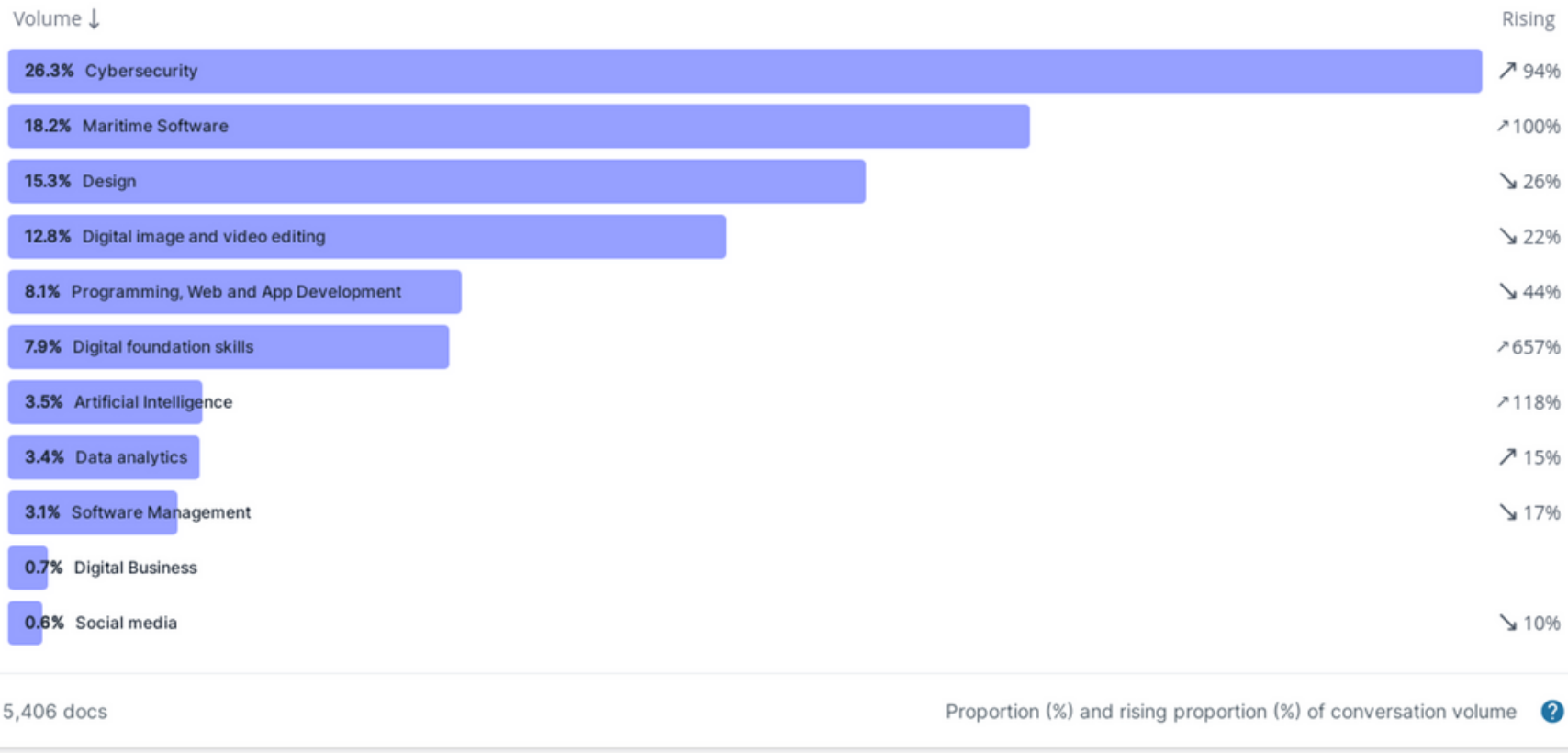
Trade and Logistics Sector (2023)

4,943 docs

Proportion (%) and rising proportion (%) of conversation volume

Source: Digital Skills Monitor. **Data collected from:** Jan 1, 2023 to Jun 30, 2023. **Downloaded:** 03/07/2023. **Powered by Citibeats. This chart represents:** Proportion (%) and...
view all

BPO and Global Digital Services Sector (2023)

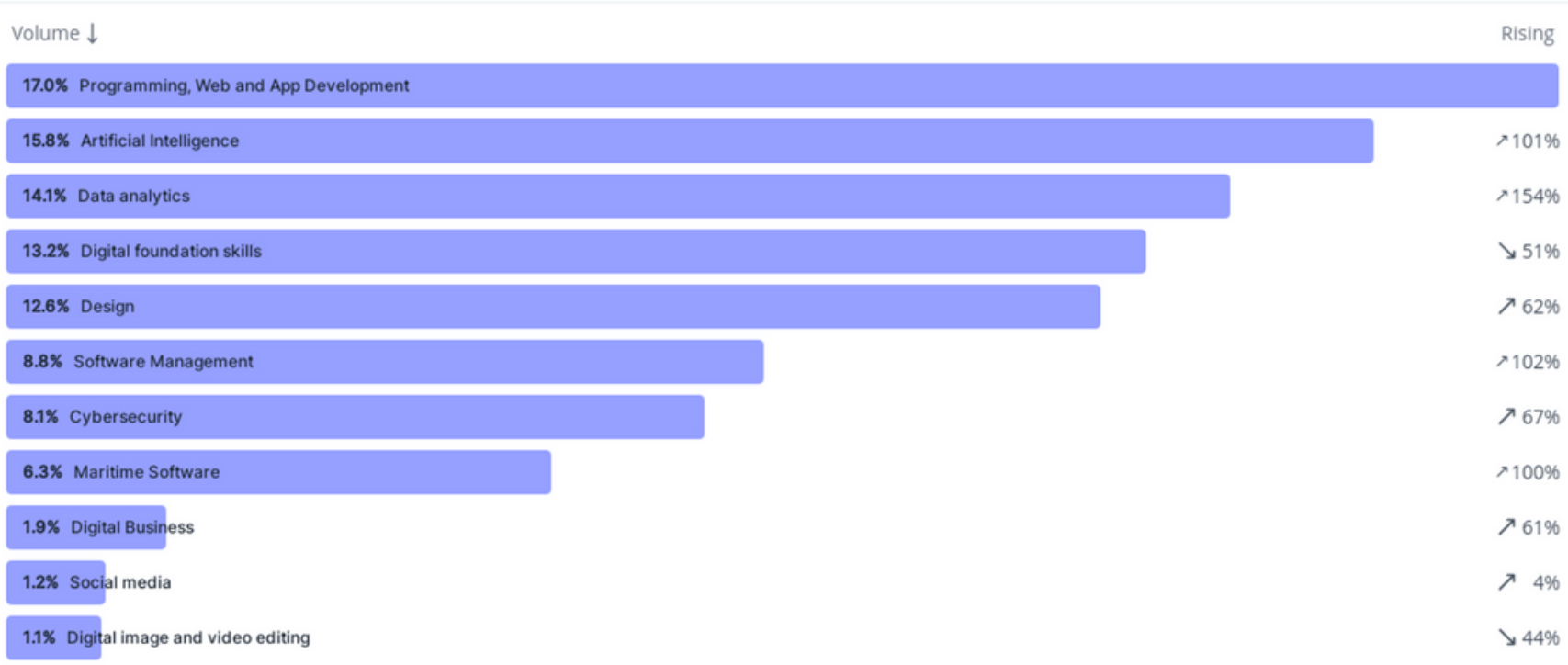


5,406 docs

Proportion (%) and rising proportion (%) of conversation volume

Source: Digital Skills Monitor. **Data collected from:** Jan 1, 2023 to Jun 30, 2023. **Downloaded:** 03/07/2023. **Powered by Citibeats. This chart represents:** Proportion (%) and...
view all

Energy Sector (2023)

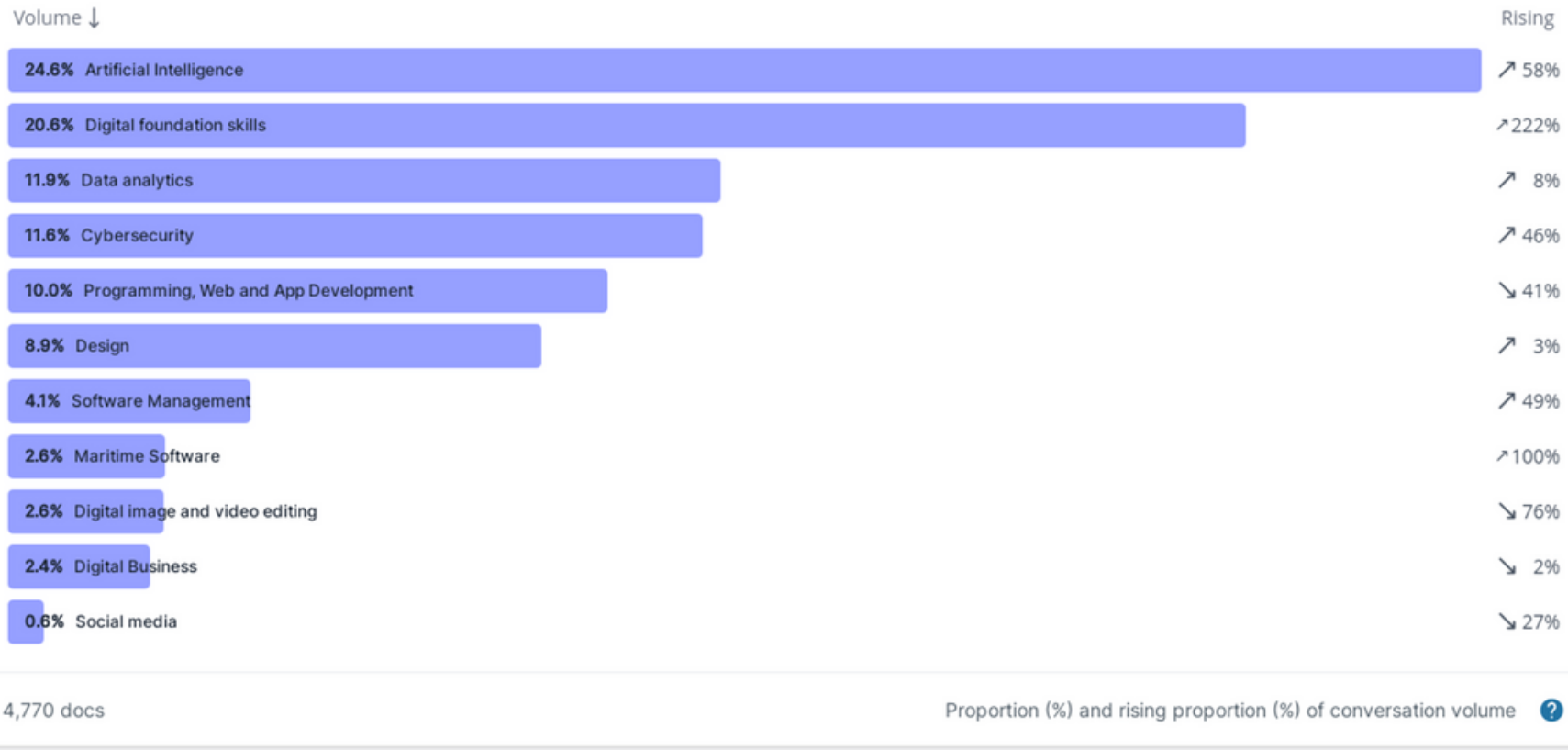


1,543 docs

Proportion (%) and rising proportion (%) of conversation volume

Source: Digital Skills Monitor. **Data collected from:** Jan 1, 2023 to Jun 30, 2023. **Downloaded:** 03/07/2023. **Powered by Citibeats. This chart represents:** Proportion (%) and...
view all

Finance Sector (2023)



4,770 docs

Proportion (%) and rising proportion (%) of conversation volume

Source: Digital Skills Monitor. **Data collected from:** Jan 1, 2023 to Jun 30, 2023. **Downloaded:** 03/07/2023. **Powered by Citibeats. This chart represents:** Proportion (%) and...
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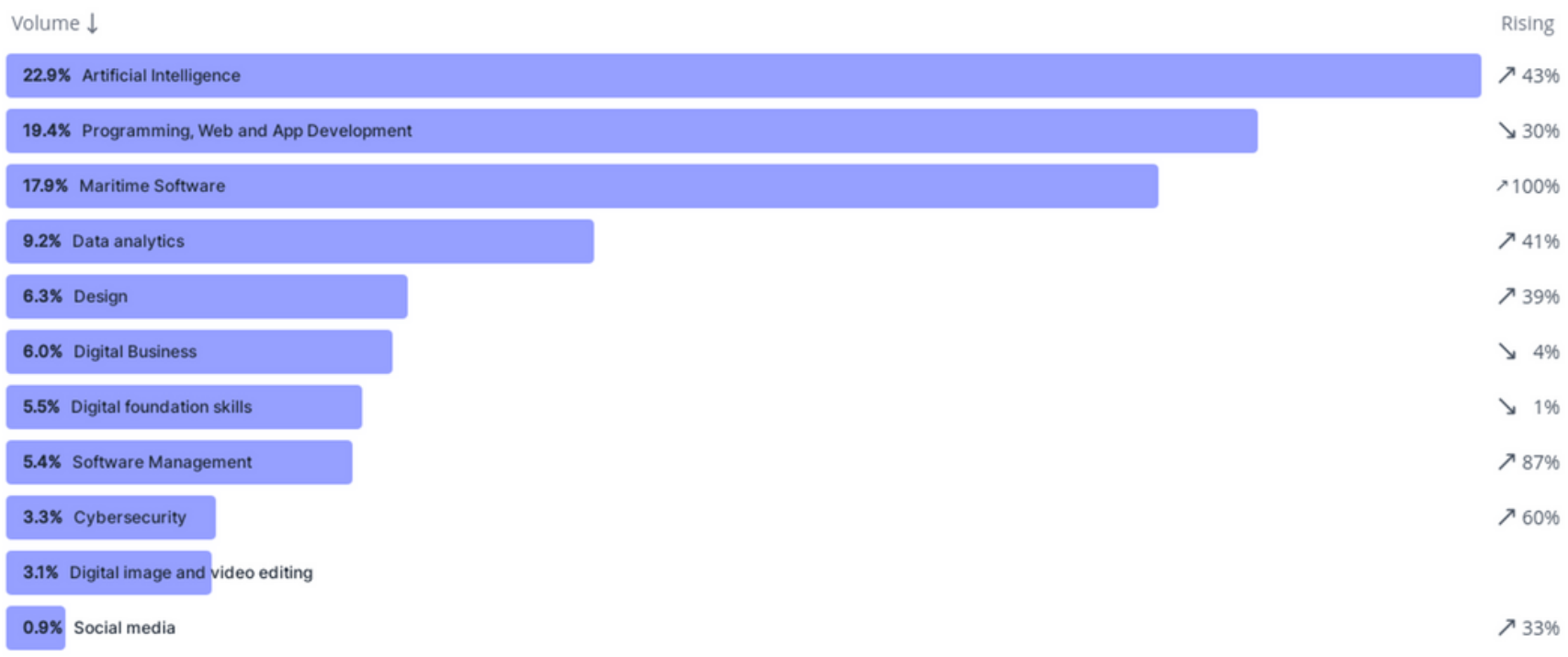
Construction Sector (2023)



4,020 docs

Proportion (%) and rising proportion (%) of conversation volume

Source: Digital Skills Monitor. **Data collected from:** Jan 1, 2023 to Jun 30, 2023. **Downloaded:** 03/07/2023. **Powered by Citibeats. This chart represents:** Proportion (%) and...
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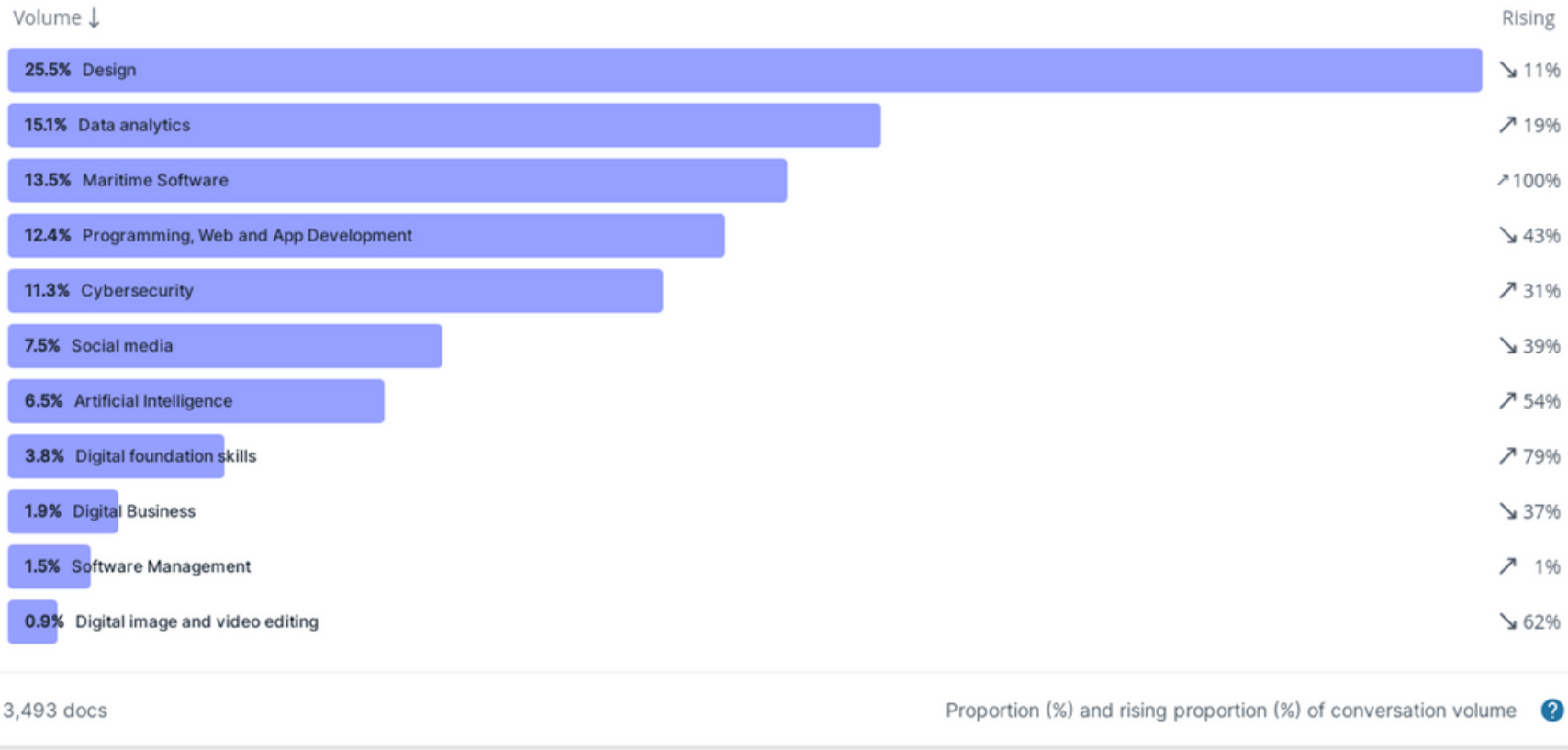
Creative Sector (2023)



3,493 docs

Proportion (%) and rising proportion (%) of conversation volume

Source: Digital Skills Monitor. **Data collected from:** Jan 1, 2023 to Jun 30, 2023. **Downloaded:** 03/07/2023. **Powered by Citibeats. This chart represents:** Proportion (%) and...
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