TMF+

THE MEDICAL FUTURIST

THE MEDICAL FUTURIST'S
SURVEY ON GENERATIVE AI IN HEALTHCARE

In recent years, Artificial Intelligence (AI) has become a key part of advancements in medicine and healthcare. Then came November 2022, when a new expression, generative AI took center stage, capturing global attention. With the launch of ChatGPT, AI transcended its niche and suddenly hundreds of millions had the opportunity to effortlessly harness its power and implement it practically.

Generative AI represents a subset of AI proficient in discerning patterns and structures within given data, subsequently generating novel ones. Its prowess isn't just confined to simulating conversations and gauging user satisfaction. It conducts these simulations billions of times daily, advancing at an astronomical pace. Generative AI is adept at producing text, images, and a myriad of other media forms based on specific prompts.

Large Language Models (LLMs), such as ChatGPT or Bard, can interpret and produce text that mirror human articulation, rooted in the patterns they've assimilated during their training.

And finally, **prompt engineering** is the act of "issuing precise commands to AI". In a more formal sense, it encapsulates the expertise required to design potent prompts that steer AI models toward producing the intended content.

It's essential for all stakeholders—whether patients, healthcare professionals, company leaders, or policymakers—to grasp what generative AI can bring to our lives and jobs. This comprehension is vital, both to capitalize on its potential and to maintain a balanced perspective, avoiding the pitfalls of exaggeration or understatement.

We asked almost 400 healthcare leaders who shared their perspectives on this topic—with a special focus on Large Language Models (LLMs) and here we share their insights with you.

For those eager to delve deeper into the intricacies of this domain, we've been your steadfast companion, chronicling the evolution and applications of ChatGPT, LLMs, Generative AI, Med-PaLM, and much more. Feel free to explore **our comprehensive repository of articles** or consult our latest offering, the **Generative AI In Healthcare ebook**, to stay abreast of the latest developments. Additionally, our course on **Artificial Intelligence in Medicine and Healthcare** provides a holistic overview of AI's burgeoning role in this sector.

With this foundational understanding in place, let us now explore the insights and perspectives shared by our extensive network of healthcare professionals. And as always, we encourage and appreciate your active engagement in this ongoing dialogue.
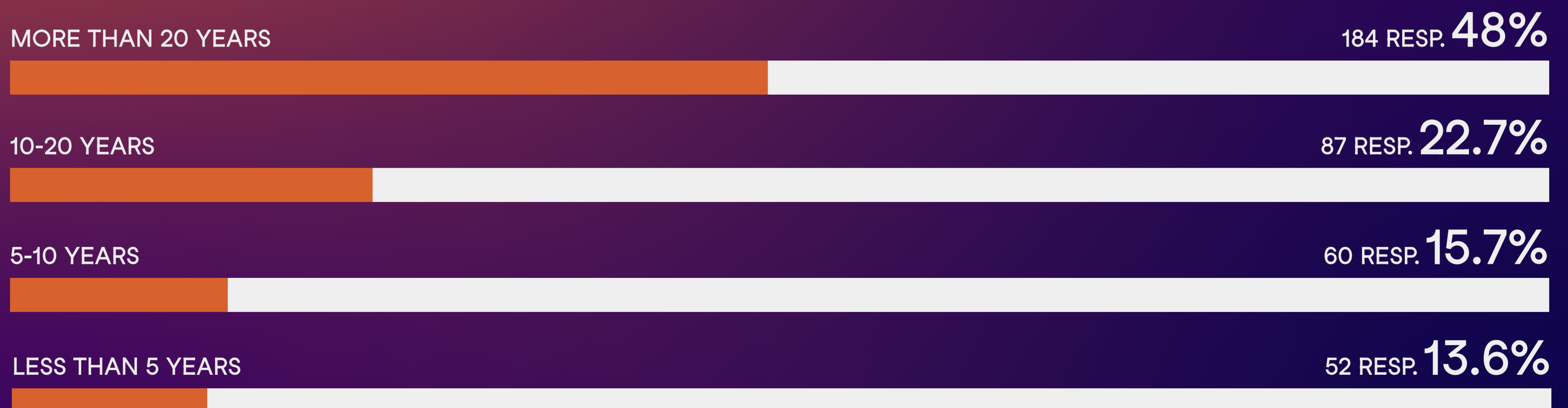
Dr. Bertalan Meskó
The Medical Futurist

WHAT IS YOUR ROLE IN THE HEALTHCARE FIELD?

382 OUT OF 386
ANSWERED

PHYSICIAN
141 RESP. **36.9%**

NON-HEALTHCARE PROFESSIONAL
97 RESP. **25.4%**

COMPANY LEADER
87 RESP. **22.8%**

HEALTHCARE ADMINISTRATOR
43 RESP. **11.3%**

NURSE
14 RESP. **3.7%**

HOW MANY YEARS OF EXPERIENCE DO YOU HAVE IN YOUR ROLE?

383 OUT OF 386
ANSWERED

MORE THAN 20 YEARS
184 RESP. **48%**

10-20 YEARS
87 RESP. **22.7%**

5-10 YEARS
60 RESP. **15.7%**

LESS THAN 5 YEARS
52 RESP. **13.6%**

THEIR PERCEPTION OF LARGE LANGUAGE MODELS

HAVE YOU HEARD OF LARGE LANGUAGE MODELS (LLMS) SUCH AS OPENAI'S GPT-3 OR GPT-4?

383 OUT OF 386 **ANSWERED**

YES   141 RESP. **93.7%**

NO   24 RESP. **6.3%**

HAVE YOU HEARD OF OR USED CHATGPT?

384 OUT OF 386 **ANSWERED**

YES, I HAVE USED IT   316 RESP. **82.3%**

YES, I HAVE HEARD OF IT, BUT NOT USED IT   57 RESP. **14.8%**
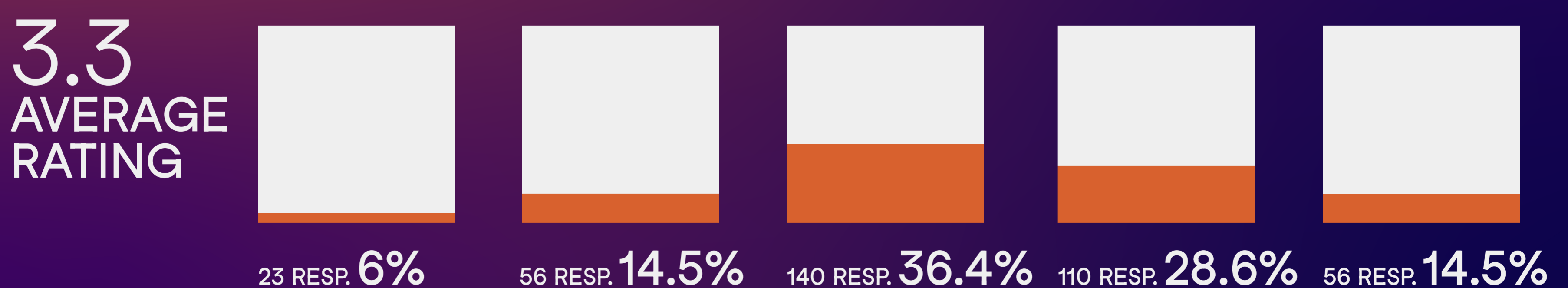
NO, I HAVE NOT HEARD OF OR USED IT   11 RESP. **2.9%**

HOW DO YOU PERCEIVE THE ROLE OF LLMS AND TECHNOLOGIES LIKE CHATGPT IN THE FUTURE OF HEALTHCARE?

384 OUT OF 386 **ANSWERED**

VERY POSITIVE — 220 RESP. **57.3%**

SOMEWHAT POSITIVE — 123 RESP. **32%**

NEUTRAL — 29 RESP. **7.6%**

SOMEWHAT NEGATIVE — 7 RESP. **1.8%**

VERY NEGATIVE — 5 RESP. **1.3%**

RATE YOUR UNDERSTANDING OF LLMS ON A SCALE OF 1 TO 5.

385 OUT OF 386 **ANSWERED**

3.3 AVERAGE RATING

23 RESP. **6%**

56 RESP. **14.5%**

140 RESP. **36.4%**

110 RESP. **28.6%**

56 RESP. **14.5%**

HOW MUCH DO THEY KNOW ABOUT LLMS?

HAVE YOU EVER USED LLMS OR CHATGPT IN YOUR PROFESSIONAL WORK?

383 OUT OF 386 **ANSWERED**

YES, OCCASIONALLY
142 RESP. **37.1%**

YES, FREQUENTLY
114 RESP. **29.8%**

NO, BUT I AM OPEN TO IT
111 RESP. **29%**

NO, AND I DO NOT PLAN TO
16 RESP. **4.2%**

IF YOU HAVE USED LLMS OR CHATGPT, IN WHAT WAYS HAVE YOU APPLIED THEM?

334 OUT OF 386 **ANSWERED**

RESEARCH
220 RESP. **65.9%**

ADMINISTRATIVE TASKS
142 RESP. **42.5%**

PATIENT EDUCATION
85 RESP. **25.4%**

CLINICAL DECISION SUPPORT
80 RESP. **24%**

OTHER
65 RESP. **19.5%**
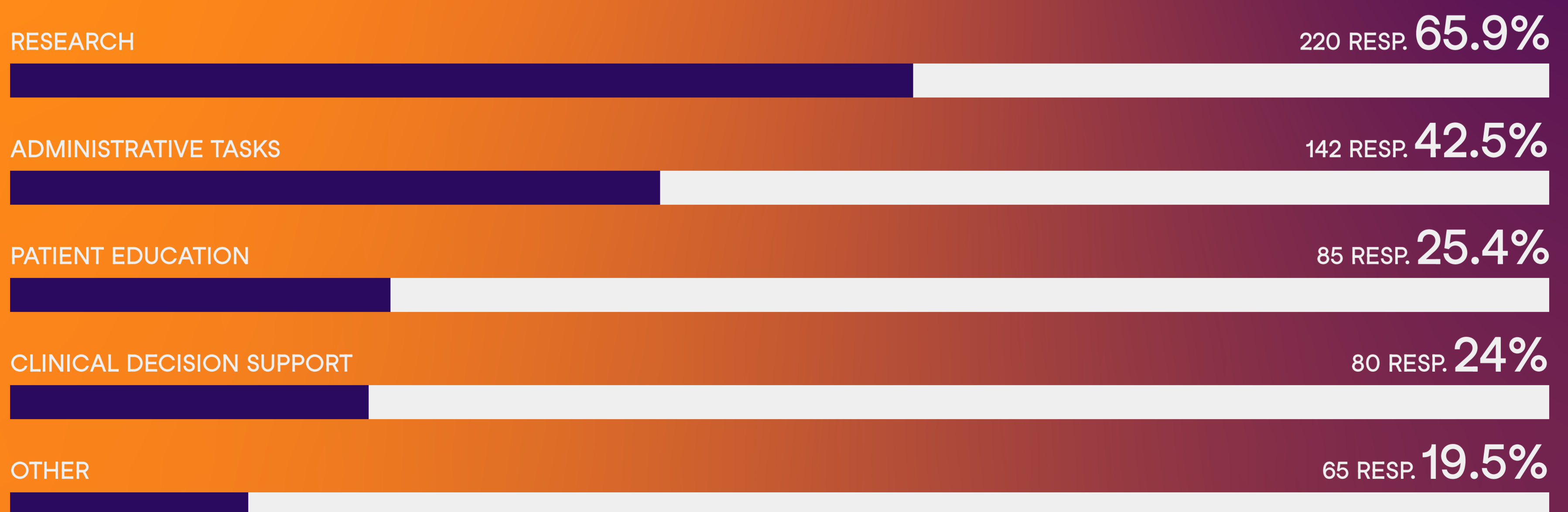
HOW MUCH DO THEY KNOW ABOUT LLMS?

IF YOU HAVE USED LLMS OR CHATGPT, RATE THE SUCCESS OF LLMS OR CHATGPT IN ASSISTING YOUR WORK ON A SCALE OF 1-5

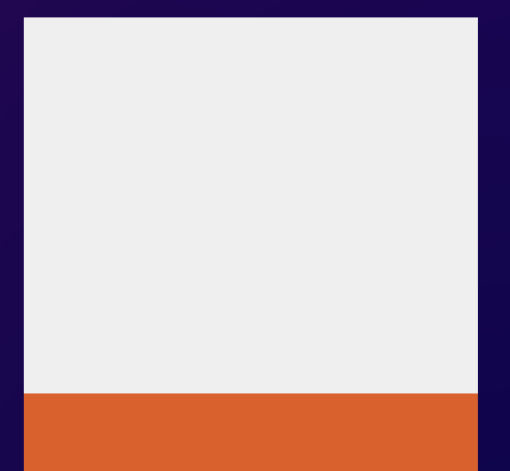**341** OUT OF 386 **ANSWERED**

3.5 AVERAGE RATING

17 RESP. **5%**	30 RESP. **8.8%**	108 RESP. **31.7%**	129 RESP. **37.8%**	57 RESP. **16.7%**
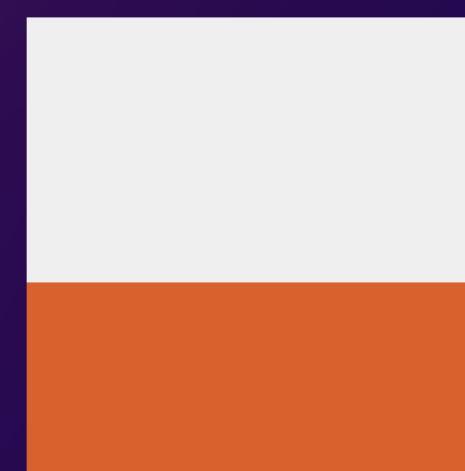
PROMPT ENGINEERING AS AN ESSENTIAL SKILL

ARE YOU FAMILIAR WITH THE CONCEPT OF "PROMPT ENGINEERING" IN THE CONTEXT OF LLMS?

382 OUT OF 386 **ANSWERED**

YES — 218 RESP. **57.1%**

NO — 164 RESP. **42.9%**

PROMPT ENGINEERING AS AN ESSENTIAL SKILL

HAVE YOU ATTEMPTED TO ENHANCE YOUR PROMPT ENGINEERING SKILLS?

375 OUT OF 386 **ANSWERED**

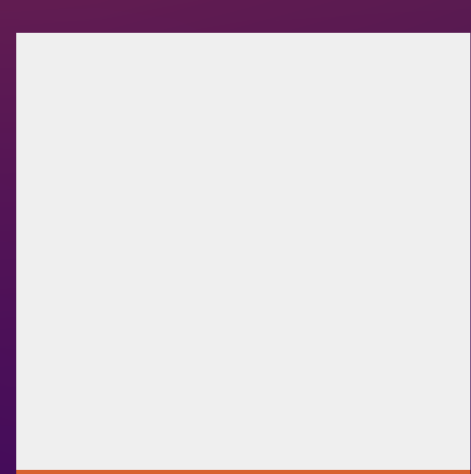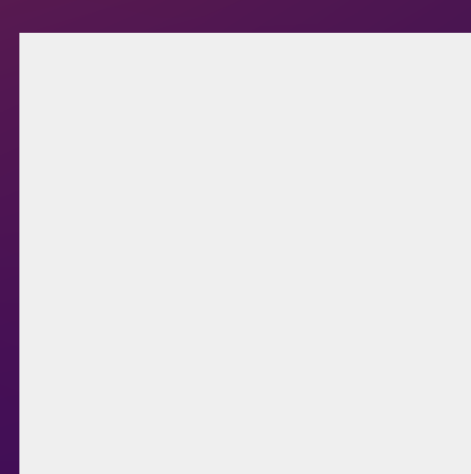|		
YES	170 RESP.	**45.3%**
NO	205 RESP.	**54.7%**

IN YOUR OPINION, HOW IMPORTANT IS PROMPT ENGINEERING FOR SUCCESSFUL APPLICATION OF LLMS IN HEALTHCARE ON A SCALE OF 1-5?
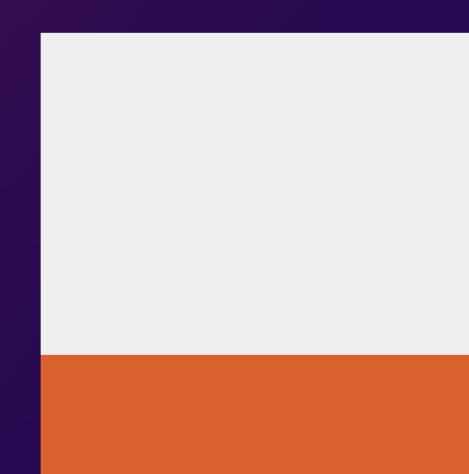
358 OUT OF 386 **ANSWERED**

4.0 AVERAGE RATING
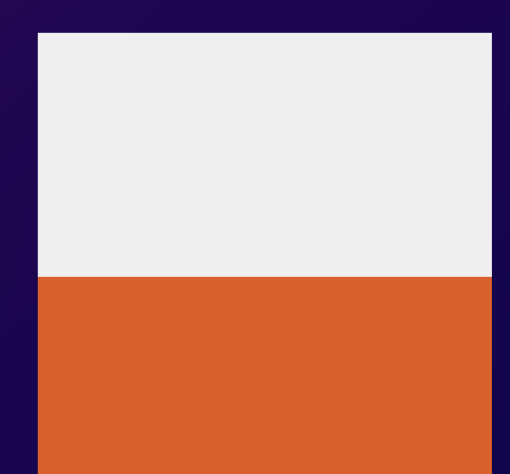
14 RESP. **3.9%**	11 RESP. **3.1%**	79 RESP. **22.1%**	101 RESP. **28.2%**	153 RESP. **42.7%**

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