AI FOR FUNCTIONAL SIZING:
PENDING THREAT, A FUTURE FAD, OR HARMLESS HOAX?

By: Joe Schofield

The proliferation of artificial intelligence (AI) demands the attention of organizations and individuals, particularly those in the technology world. Identifying sectors of our economies and personal lives that are immune to forthcoming changes triggered by AI is becoming increasingly challenging. Depending on one's perspective, emotions range from euphoric anticipation to trepidation. Applying the effects of AI to software development and measurement may expose vulnerability and induce a modicum of anxiety.

Twelve years ago, this author's article in *MetricViews* advocated for the necessity of certified function point professionals.[1] Re-examination of that earlier assertion, given the advances in AI, might result in a very different answer today. But before we can assess the need for certified specialists, it is worthwhile to clarify AI's rapidly evolving state today. Keep in mind that the propagation of AI's capabilities and application domains are rapidly expanding. The table below evidences that AI infiltration is faster than any of today's widely adopted technologies. But first, let's review how AI is depicted. In general, AI is the application of historically human intelligence for decision-making, speech recognition, and language translation using natural language processing, machine learning, and robotics. Navigation systems, voice authentication, and interactive voice language interpretation are respective examples of noted applications.[2] The desired outcomes of AI introduction are cost savings, productivity increases and consistent and improved client engagements.

Many of the most recognized names in technology dominate the AI chip market, including NVIDIA, AMD, Intel, Alphabet, Apple, Amazon, Microsoft, and Tesla. Most of these are clients of Taiwan Semiconductor Manufacturing (TSCM). TSCM produces the semiconductors using advanced lithography to produce about 90% of AI chips. As a foundry, TSCM enables its clients to scale by manufacturing chips designed by their clients but does not design the chip itself.[3] Integrated device manufacturers (IDMs) like Intel and Samsung design *and* manufacture their chips.

The speed of AI adoption compounds its interest; its popularity increasingly attracts new users similar to a black hole's gravitational pull absorbing everything around it, including light.[4] The table below captures well-known technologies and how quickly they were assimilated.[5]

TECHNOLOGY/PRODUCT	TIME	USAGE/USERS
ChatGPT	2 months	100 million globally
TikTok	8 months	50 million globally
Facebook	3 years	50 million globally
Smartphones	10 years	as high as 80% in countries
Internet	~20 years	50% globally
Electric Vehicles	10 years	10% globally
Television	by 1950	9% US households
Television	by 1959	85.9% US households[6]

Given that brief and high-level overview of AI, a more pertinent question for those in the functional measurement community might be, *"Is there an imminent threat of AI usage replacing the human skills for counting function points?"*

Given the evidenced rapid expansion of AI in power and application, answering that question would be minimally speculative and potentially foolhardy. However, answers can be proffered to ascertain a sense of the applicability of AI regarding functional sizing. For example, in January 2025, ChatGPT was asked:[7]

REQUESTED TASK	CHATGPT RESPONSE INCLUDED . . .
Using IFPUG's ISO standard 20296, please count the number of function points on the joejr.com homepage	Describing how function points are counted. First, the five function types were defined. To its credit, ChatGPT correctly noted the three levels of complexity—low, average and high—associated with each function type and their varying weights. ChatGPT offered four steps for determining the functional size, or more correctly, the unadjusted function points. As part of the next steps, ChatGPT offered assistance in further analysis based on more specifics given that the tool could not (even estimate) the count in "real-time." This response provided a low degree of satisfaction.
A slightly more sophisticated, but still relatively simple task was posed as follows: *Using IFPUG's ISO standard 20296, please count the number of function points on PayPal's All Reports option*	Stating that the analysis started but ended with "something went wrong . . . please contact our support center." This response provided a low degree of satisfaction.
A more difficult task was posed: *Using IFPUG's ISO standard 20296, please count the number of function points on IFPUG's homepage @ifpug.org*	Providing a general description of "how to" determine a function point count. This response ended with, "For a precise evaluation, it's recommended to consult with a Certified Function Point Specialist (CFPS) . . ." This response provided low satisfaction while providing guidance on contacting a CFPS. I suppose IFPUG members can take some solace in this response.
Unsure if ChatGPT had a personal preference for functional sizing, this request shifted focus to the COSMIC approach and its website. *Using COSMIC's ISO standard 14143, please count the number of function points on COSMIC's homepage @ cosmic-sizing.org*	Overviewing for determining such a count, including Functional User Requirements, Base Functional Components and Data Movements. Ultimately, I was referred to the COSMIC website. This response provided a *low* degree of satisfaction.
This next request incorporated Software Non-Functional Assessment Process (SNAP) counts. *Using IFPUG's SNAP standard in ISO/IEC/IEEE 32430:2025, help me understand how many SNAP points are part of the webpage joejr.com*	Identifying six non-functional attributes and four steps for assessing SNAP points and the need for tools for detailed analysis. After a follow-up response to "proceed," key features of the website were identified, and the same six non-functional attributes were repeated from the initial inquiry. The response noted a likely modest number of SNAP points due to the "straightforward design and functionality" nature of the site. This response provided a moderate degree of satisfaction, considering the subtle compliment associated with the website.[8]

Given the responses above, one can only conclude that no imminent threat exists that function size measurement will soon be supplanted by AI analytical engines, certainly not by the ChatGPT chatbot. The same conclusion applies to AI of a non-functional size. Both conclusions are relevant to the AI engine in question, and as researchers often say, "more research is warranted."

A second caveat deserves mentioning. The term "imminent" may itself contribute ambiguity to any reliable conclusion; that is, how fast or soon is "imminent?" For instance, the CDC 6600 is generally considered the first supercomputer. It was the world's faster computer until 1969, operating at 3 MFLOPs. But, the passage of time casts a shadow on all things tech. Compare the 6600's performance to the world's fastest supercomputer today—El Capitan's (the supercomputer, not the "rock" in Yosemite) peak ability to operate at 2.79 exaFLOPs.[9] The difference in performance is roughly 2/3 (106) or 2/3 (1,000,000) or (again) roughly 667,000 times faster.[10] Imminent in the supercomputer domain has shrunk by 667,000 times in just the last 55 years. Thus, the accelerated advancement of AI may render any implied imminency useless. Stated in another way, the possibility of AI tackling the determination of function sizing could happen before this article is published, though the risk of that may be quite low.

Not all AI-related emergent threats can be disregarded. Some of AI's most rapidly nascent aspects include machine learning and robotics. The robotics market is projected to increase six-fold in the next five years. Given the algorithmic nature of unadjusted function points and SNAP, the power of AI to apply natural language processing, and the proclivity of growing acceptance of AI in the workplace, robotics could soon play a role. First as an assistant and not much thereafter, as the lead, a robotic presence could assist with:

- extracting requirements from mounds of existing documentation,
- developing questions to fill suspected gaps in understanding,
- using natural language interfacing to acquire responses,
- identifying anomalies in responses,
- resolving those anomalies,
- developing the use cases, delivering a software solution, and
- performing functional sizing.

ChatGPT generated the following image with a request to ChatGPT: "Please create an image of a human-like robot counting lines of code." See copyright note.[11] Hardly implausible, companies have been generating unadjusted function point counts for years from code.[12] This approach does not use the crude practice known as "backfiring" but instead its analytic engine. Many of today's software solutions are written in different languages and likely have redundant and unused features. Thus, the preference for measuring requirements-driven functionality differs from that of

delivered software. Closing the gap on the differences would seem achievable, and the rules-based nature of the underlying algorithms would seem ideally suited to AI exploitation.

In summary, AI has not yet nullified the need for competent software measurement professions. Regardless of your standard of choice, the nature of function point analysis is ripe for absorption into the AI world. Robots, especially human-like (humanoids), could play an important role, initially as an assistant or partner with another "set of eyes" during measurement processes. That time will likely to be sooner than many in our community might desire. The age-old adage of machines freeing people to do higher-level or "other work" may or may not hold true in this case. Not to dabble into another controversy, but a robot wouldn't be likely to put up a fuss if asked to "return to the office" rather than continuing to work from home. Attitudes about work need not bolster the transitioning of who does the work; AI is less likely to care.

RESOURCES

[1] *Why You Need a Certified Function Point Specialist (CFPS);* MetricViews; International Function Points Users Group; January, 2013

[2] https://finbold.com/guide/10-biggest-ai-companies-in-the-world/; a ChatGPT response on 2/24/2025 to the question regarding the largest AI companies globally

[3] a ChatGPT response on 2/24/2025 to the question what's the difference between TSC semi-conductors and AI chip manufacturing

[4] https://en.wikipedia.org/wiki/Black_hole; retrieved 2/26/2025

[5] ChatGPT response 2/23/2025; Technology adoption rates vary based on how quickly new innovations spread among consumers

[6] https://historyfacts.com › arts-culture › article › life-in-1950s-america-by-the-numbers

[7] The full unedited version of this dialog with ChapGPT can be found at: https://joejr.com/MVS2025n.pdf

[8] The author admits that flattery and ego may have played a role in the somewhat elevated level of satisfaction with this response

[9] https://www.pcmag.com/news/us-el-capitan-is-now-the-worlds-fastest-supercomputer-top500

[10] https://en.wikipedia.org/wiki/Floating_point_operations_per_second; retrieved March 1, 2025

[11] https://www.copyright.gov/newsnet/2025/1060.html; January 29, 2025; retrieved 3/2/2025

"After considering the extensive public comments and the current state of technological development, our conclusions turn on the centrality of human creativity to copyright," said Shira Perlmutter, Register of Copyrights and Director of the U.S. Copyright Office. "Where that creativity is expressed through the use of AI systems, it continues to enjoy protection. Extending protection to material whose expressive elements are determined by a machine, however, would undermine rather than further the constitutional goals of copyright."

[12] https://www.castsoftware.com/glossary/function-point-counting-tool; CASTs Application Intelligence Platform; retrieved 3/2/2025
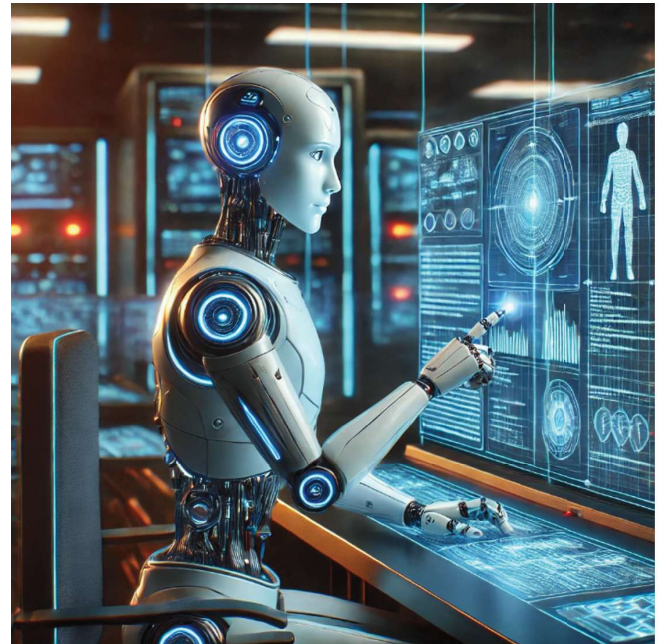
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