

Data Report

The 2024 AI Skills and Impact Data Report

Explore AI's impact on South Africa's tech ecosystem, companies and developers' skillsets

OFFER ZEN



Introduction

AI has been South African developers' [most promising industry since 2021](#). Now, nearly four years later it remains unchallenged at the top of the pile.

AI's rapid advancements over the past year have already made it an integral part of the local development landscape. Tools like ChatGPT and Co-pilot are playing an ever-increasing role in how developers tackle technical and business problems. But, finding reliable data to understand and measure its impact remains a challenge.

To help you navigate the AI age, we asked the South Africa developer community about AI and put together a report unpacking how they're using AI, its impact and implications.

We hope this helps you better understand AI's role and impact in the ZA Tech Sector using data from over 3900 developers who took our Dev Nation Survey, as well as our AI skills survey and input directly from the tech community.



Philip Joubert
OfferZen Co-founder

In this guide, you'll get data on:

- 1 How developers are freeing up capacity with AI tools
- 2 The AI skills developers need to drive impact
- 3 The growing importance of soft skills



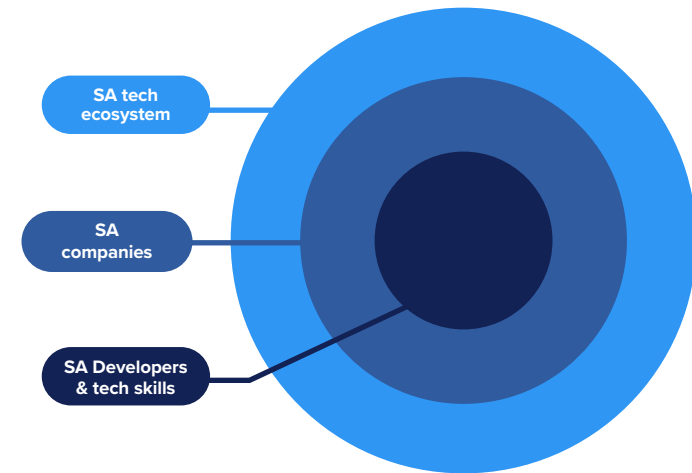
AI is already **playing a large role** in the software development process

AI's recent progress show no signs of slowing down and it's getting harder for developers and companies to ignore AI tools:

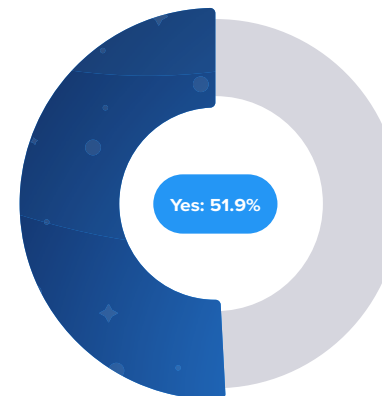
- The majority of South African devs are using AI APIs and code-writing assistants in their roles and projects
- And the majority of developers say [their companies allow or encourage them to use AI tools](#) to create production code

With the help of the tech community, this report drills down on AI's impact in South Africa's tech sector, starting with the broader ecosystem then zooming in to how it affects companies and developers' skillsets.

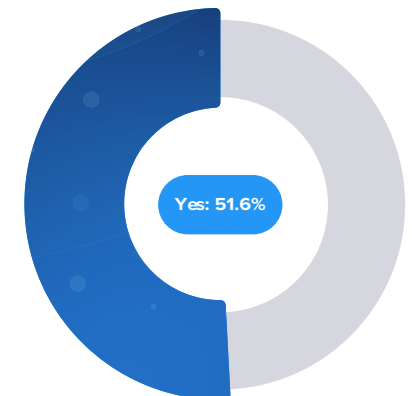
This report unpacks AI use and impact across:



Did you build or use any AI APIs in the last 12 months?



Did you use any code-writing assistants in the last 12 months?



AI is enabling developers by freeing up capacity

AI's widespread use has lead to concerns that developers are generating code without fully understanding the fundamentals or context, and that less experienced team members are becoming too reliant on these tools.

The data points to a different reality: Devs aren't using AI to cut corners or cover knowledge gaps. Instead, they're using AI tools like ChatGPT primarily for data analysis, automating processes, and levelling up.

Automating routine tasks is freeing up capacity to spend more time on problems that have a measurable customer and business impact.



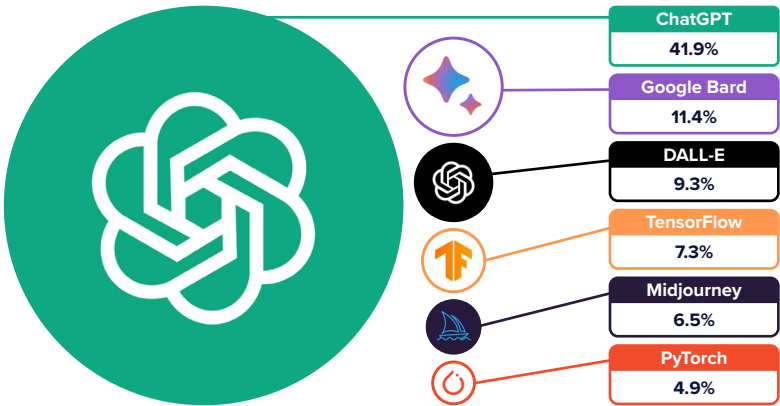
Schalk Dormehl
CTO at SwiftCom

My personal experience with AI has been that it has helped me get through work faster, but has in no way brought the “end of the work” onto the horizon.

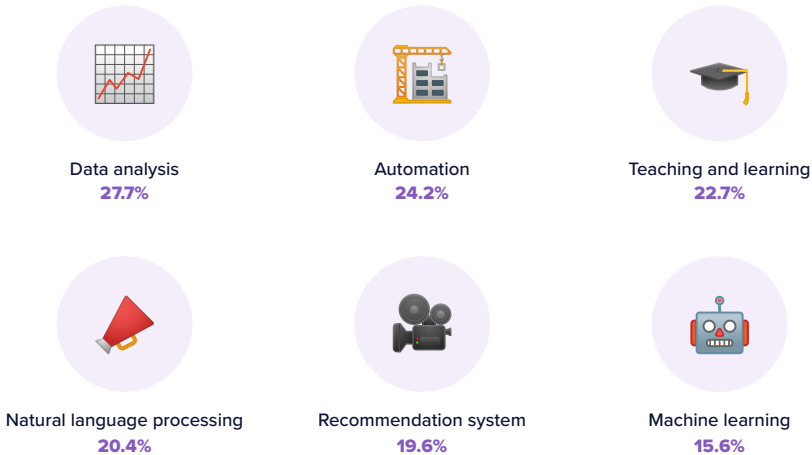
Another thing worth noting is that AI is like a buggy 3D printer for the mind. It's great at outputting parts but useless at assembling large systems together.

It definitely made us faster, but it has only increased the competitive need for systemic cohesive engineering.

What AI tools have you used in the last 12 months?



How do you use AI tools?



AI is driving customer **impact** at speed

AI tools may free up developer capacity, but assessing their actual impact on team productivity and output quality remains challenging. However, the initial feedback from both developers and engineering leads are encouraging: 75.3% say they've been able to have quicker customer impact using AI.

The majority of tech leads also report faster and more consistent impact with AI. It's worth noting that this is considerably less than developers and that nearly a quarter of engineering managers report no impact.

At the same time, these productivity gains have not come at the expense of developers. However, how you direct, integrate and quality control AI output is crucial to ensuring it's effectiveness within larger engineering systems:



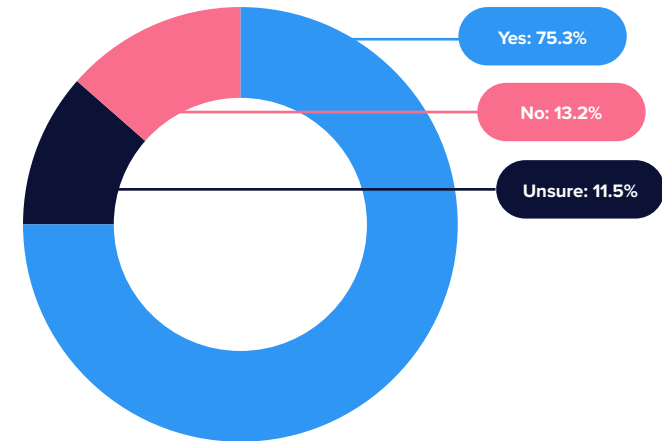
Helghartdt Avenant
Co-founder of Rehive

Yeah, totally agree that it is not replacing engineers completely.

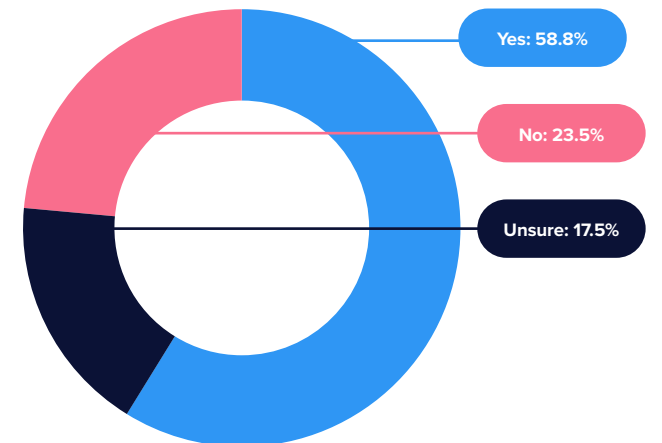
I don't fully agree that it is useless at assembling larger systems. You just have to build a lot of feedback loops into your workflow. I am talking from the perspective of building web apps in particular. A domain specific AI agent where a strong engineer can direct it, can go a long way.

In terms of cohesive engineering my opinion is that less people are often better. And if AI can help you do the same or more with less people, that is probably a more productive set up.

As a developer, have you been able to have customer impact quicker with the use of AI?



As an engineering manager, has your team shipped impact quicker or more consistently with the use of AI?




Developers need AI skills that enable them to maximise AI impact

Developers have always used their technical skills to create software that addresses a business problem or customer pain point. AI hasn't changed the importance of solid technical abilities. Instead, developers now need to master a new set of skills that allow them to use AI tools in the most effective way.

And they need to master them urgently: Nearly half of developers and tech leads say they already need these skills and over 80% say they'll be a necessity within the next few years.

So what AI skills do developers need? The data says an understanding of core AI principles is the most important, followed by prompt engineering and experience with AI-related tools, libraries and programming languages.




Software Engineer

Python, Java

Cape Town

View profile




Software Engineer

JavaScript, React

Johannesburg

View profile




Software Engineer

Python, Vue.js

Durban

View profile



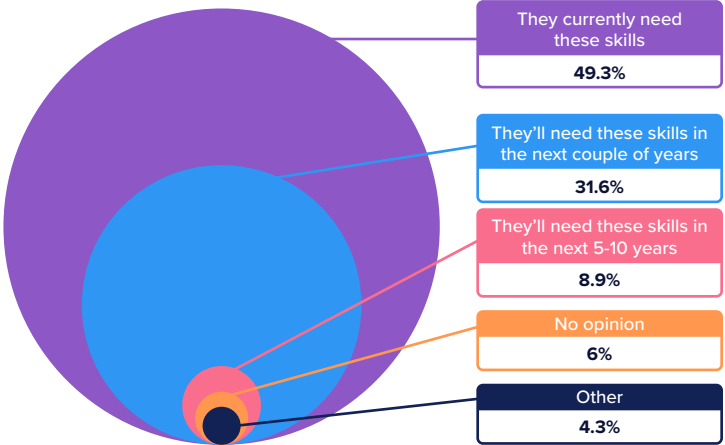
Software Engineer

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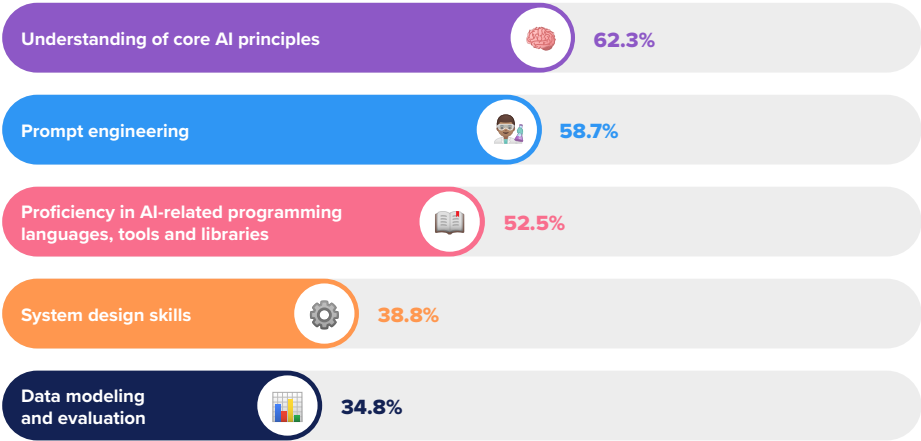
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In your view, how urgent is it for developers to have experience using AI/LLM-based tools in the workplace?



Urgency	Percentage
They currently need these skills	49.3%
They'll need these skills in the next couple of years	31.6%
They'll need these skills in the next 5-10 years	8.9%
No opinion	6%
Other	4.3%

In your view, what AI skills does a dev need?



AI Skill	Percentage
Understanding of core AI principles	62.3%
Prompt engineering	58.7%
Proficiency in AI-related programming languages, tools and libraries	52.5%
System design skills	38.8%
Data modeling and evaluation	34.8%

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AI is shifting the focus from technical to soft skills and problem-solving

Beyond the need for AI skills, the rise of AI is also making other developer skills even more important. Across the board, both developers and tech leads list complex problem-solving as the most important skill developers need in the AI age.

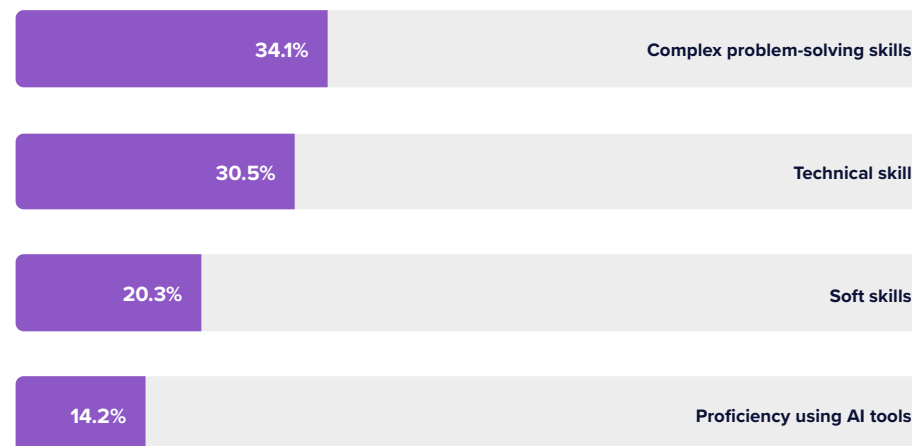
There's a difference in perspective on the most important skills for developers after problem-solving:

- Developers value technical skills after complex problem-solving (less than 4% difference from problem-solving) suggesting developers consider them crucial to their success.
- Tech leads on the other hand, are placing more emphasis on candidates' ability to communicate and work as part of a team, as companies focus more on teamwork to drive results.
- By contrast only a fifth of developers listed soft skills as important.

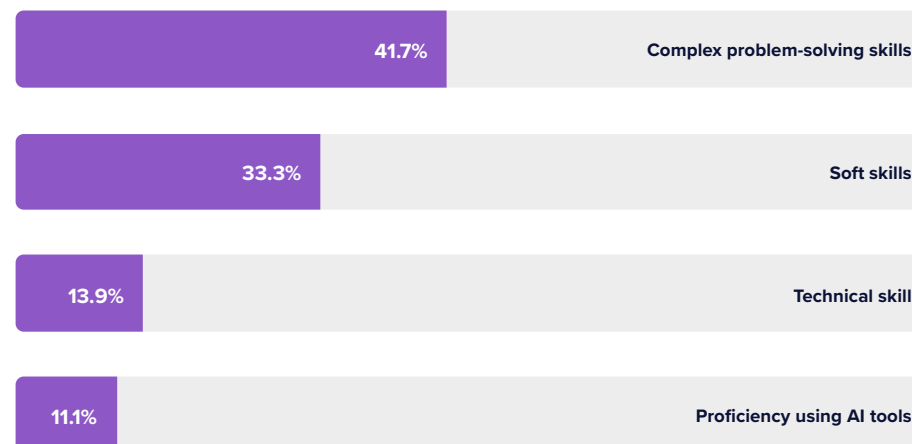
This difference in perspective can affect how developers and hiring managers show up in interviews.

Developers, for example, might focus more on showcasing their technical abilities, while interviewees may be focusing on assessing their teamwork abilities and communication style.

As a developer, what skills are most important to test during the hiring process?



As an engineering manager, what skills are most important to assess during the hiring process?



AI is shaking up tech assessments but the majority of companies don't have policies in place

Despite AI shifting emphasis away from technical skills, a technical assessment is still a standard part of most companies' hiring process. Traditionally, online coding challenges were the most popular method of assessing technical skills. However, [their use has fallen by 21.6% in the past year](#), since developers can now use AI tools to pass them.

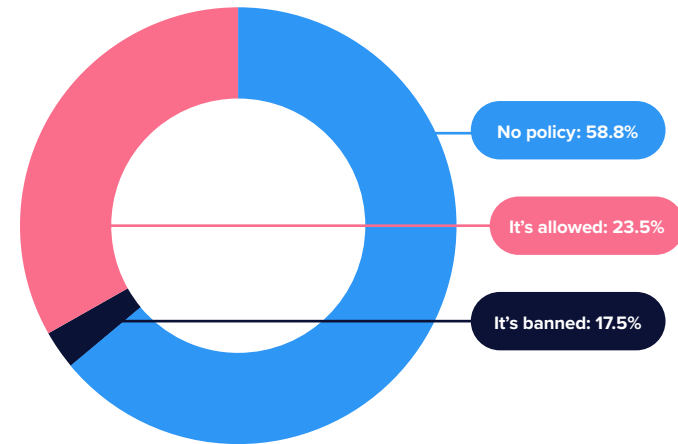
In fact, more than half of developers say they've used AI tools to complete a tech assessment.

At the same time, the majority of companies don't have a specific policy in place. Moreover, only a third of leads say they allow candidates to use AI during an assessment.

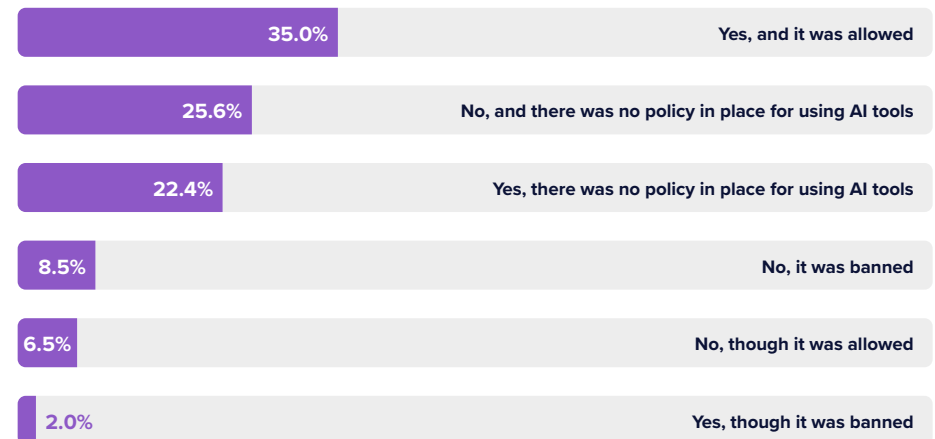
The lack of a clear policy around using AI in tech assessments, may lead to developers using tools in a way that complicated the assessment process or fails to showcase their proficiency in them.

Establishing and communicating these policies to candidates early in the hiring process can resolve some of these difficulties.

What's your policy for the use of AI in tech assessments?



Have you used an AI tool during a technical assessment?



Methodology

The data used in this report comes from three data sources: Firstly, OfferZen's State of the Developer Nation Survey conducted to find out more about skills, work experience and the job search behaviour of South African developers. A total of 5402 people took the online survey between 3 October and 27 November 2023, of which 3935 were considered valid responses.

The second is OfferZen's **AI Skills Survey**. A total of 439 people took the online survey between 17 April and 6 May 2024, of which 282 were deemed valid responses.

Both surveys were hosted on Typeform and recruited respondents via emails sent to more than 40 000 software makers in the OfferZen community and social media posts. Data was anonymised in accordance with GDPR guidelines and is housed separate to any and all of OfferZen's platform data. Percentages may not always add to 100% due to rounding.

Thirdly, additional quantitative and qualitative data is taken from OfferZen's social media community through LinkedIn polls and comments. All quotes are taken directly from these comments and attributed to their original author.

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