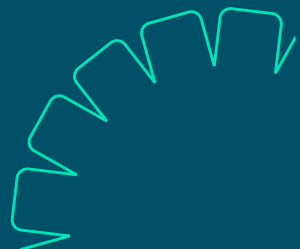
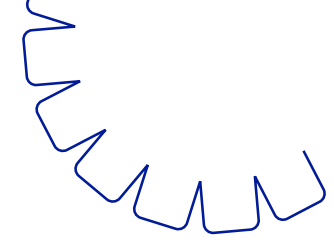


2025

Understanding AI Usage and Concerns *among* *Nordic Engineering*

Survey Report from the Association of Nordic Engineers





About the survey

In December 2024, a series of surveys were conducted by the member organisations of the Association of Nordic Engineers (ANE). These organisations include:

- The Swedish Association of Graduate Engineers (Sveriges Ingenjörer)
- The Danish Society of Engineers (IDA)
- The Norwegian Society of Engineers and Technologists (NITO)
- The Association of Chartered Engineers in Iceland (VFÍ)
- The Academic Engineers and Architects in Finland (TEK)
- The Union of Professional Engineers in Finland (ILRY)

The purpose of these surveys was to gather insights from their members regarding the current use of artificial intelligence (AI) in their respective fields and their expectations for the future.

The feedback collected aims to provide a comprehensive understanding of how AI is being integrated into engineering practices across the Nordic countries and to identify the anticipated trends and challenges associated with its adoption.

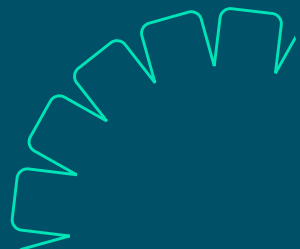
The validity and reliability of the survey

- ❖ While the members of all ANE's member organisations involved in the survey are engineers and other STEM professionals, it is important to note that the membership criteria vary across these organisations. This variation in criteria may lead to differences in the member samples surveyed by each organisation, which could explain some of the minor variations observed in the survey results.
- ❖ The sample size varies significantly between organisations depending on whether the survey was conducted as a stand-alone survey or as part of a larger survey.
- ❖ Additionally, there are slight differences in the answer scales used by the organisations in a few questions. This is highlighted on the slide and table. These factors are also considered when interpreting the survey findings to ensure a comprehensive understanding of the data.
- ❖ In general, we have focused on overall Nordic trends in the interpretation of the survey data, rather than on minor variations between countries and organisations. However, very significant differences are highlighted in the report.

The validity and reliability of the survey

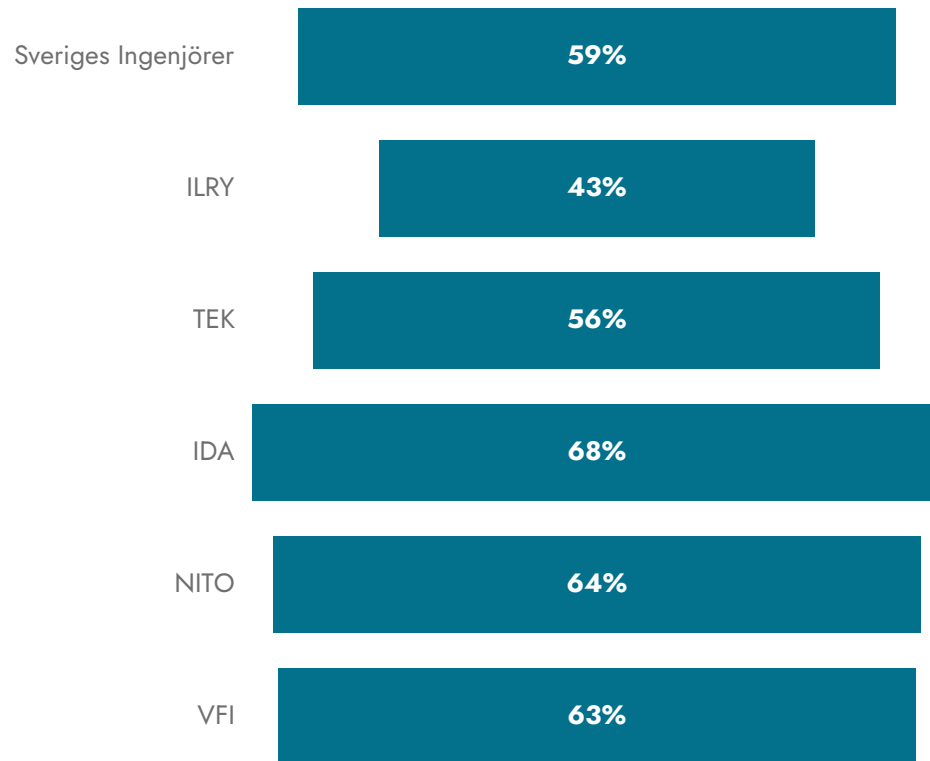
Member organisation	Member Description	Sample size
The Danish Society of Engineers (IDA)	University students and graduates from the science, technology, or engineering sector/s.	332
The Academic Engineers and Architects in Finland (TEK)	MSc students and graduates from technical fields, architecture, or an equivalent STEM degree (e.g. maths, physics, computer science).	6,283
The Union of Professional Engineers in Finland (ILRY)	Professional engineers, technical experts, municipal rescue workers, and engineering university students.	8,177
The Association of Chartered Engineers in Iceland (VFÍ)	University students and graduates from recognised engineering, technology, and science degrees.	1,358
The Norwegian Society of Engineers and Technologists (NITO)	University Students and graduates from engineering and technical degrees.	670
The Swedish Association of Graduate Engineers (Sveriges Ingenjörer)	University students and graduates from engineering degrees and technology students or graduates	1,040

AI Usage *among Nordic Engineers*



The majority of Nordic STEM professionals use AI at work

On average, **3 in 5** use AI at work.



Top 5 usage of AI at work

1. Exploring and understanding new concepts (**27%**)
2. Content creation (**26%**)
3. Assisting in creative processes (**25%**)
4. Coding-related tasks (**22%**)
5. Data analysis and processing (**20%**)

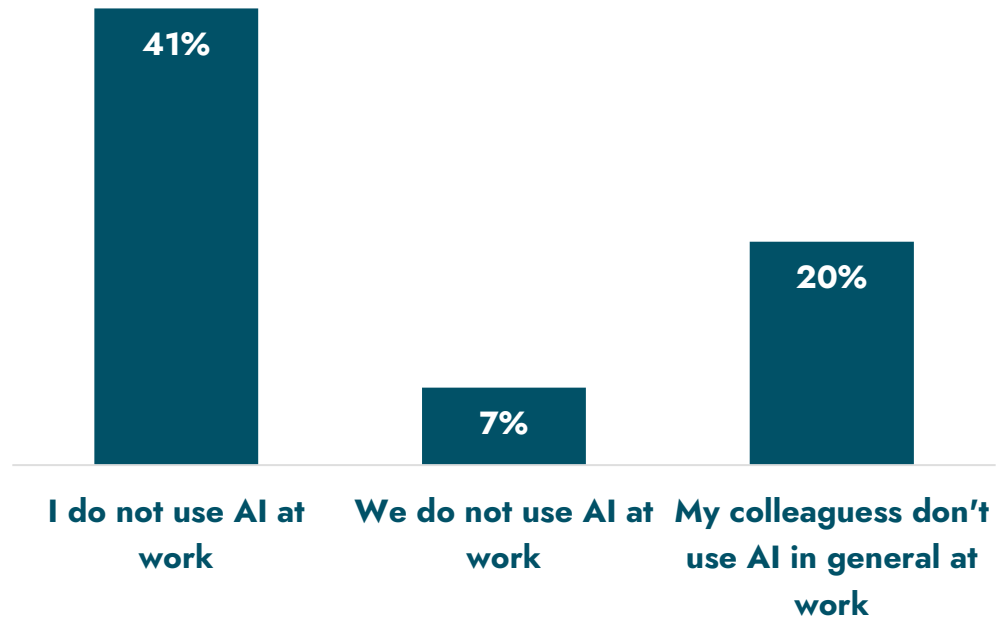
The difference seen in the data between the Academic Engineers and Architects in Finland (TEK) and The Union of Professional Engineers in Finland (ILRY) could be related to the differences in their member bases. Members of TEK are typically university-educated engineers, architects, and scientists who hold a master's degree. In contrast, members of ILRY do not have master's degrees and are more likely to be employed in roles that require practical technical skills and expertise.



Base: Members from Sveriges Ingenjörer: 879, ILRY: 8177, TEK: 6283, IDA: 332, NITO: 655, VFI: 1358

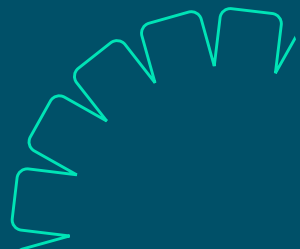
2 in 5 do not use AI at work

What do you primarily use AI for at your workplace and what do your colleagues primarily use AI for?



- 2 in 5 (41%) of Nordic STEM professionals do not use AI at work. 1 in 5 say that their colleagues do not generally use AI at work, while an average of 7% state that their workplace does not use AI at all. These responses suggest that although AI is widely used in workplaces where engineers are employed, it is not yet utilised by all colleagues.
- This disparity might be due to the fact that in some organisations, AI is implemented in specific departments or for particular tasks where it can provide immediate benefits, such as automating customer service interactions, enhancing data analysis, or improving security measures. However, the full integration of AI into all business processes can be a gradual and complex process, often requiring significant investment in technology, training, and change management.
- The 20% response indicating that "My colleagues do not generally use AI at work" implies that while AI adoption is present, it is not yet pervasive across all areas of the workplace.

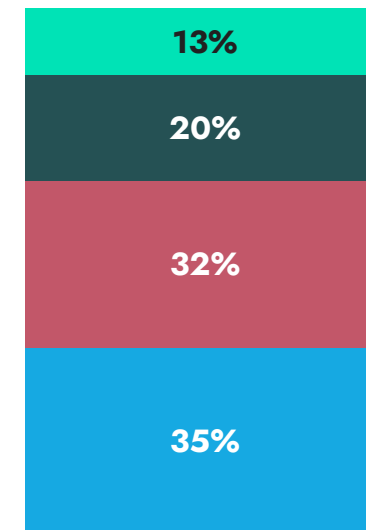
The *positive impact* on the use of AI at work



1 in 3 find that AI **increases Work productivity**

- **A significant portion sees benefits regarding the impact of AI on productivity. More than one-third (35%) of Nordic STEM professionals feel that AI has positively impacted their productivity at work.**
- A notable percentage (45%) of respondents are unsure about AI's impact on their productivity, with 13% answering "Don't know" and 32% stating "Neither agree nor disagree".
- As previously shown, a notable portion (41%) of Nordic STEM professionals do not use AI at work. This lack of exposure to AI could explain why 45% of respondents are unsure about its impact on their productivity.
- The 20% who disagree with the statement may indicate some dissatisfaction or challenges with AI implementation.
- Denmark (IDA) stands out with the highest positive perception of AI's impact on productivity at 57%, while Finland (ILRY) shows the lowest positive perception at 19%.

AI has made me more productive
at work



- AGREE (net)
- Neither agree nor disagree
- DISAGREE (net)
- Don't know

Base: Members from Sveriges Ingenjörer: 518, ILRY: 8121, TEK: 6283, IDA: 223, NITO: 665 VFI: 1358

Question: To what extent do you agree or disagree with the following statement "AI has made me more productive at work"

Nordic STEM professionals **are not** worried about AI affecting their job security

In general, only a very small share of Nordic STEM professionals feel threatened by the impact of AI when it comes to their job security.

Specifically, only 6% of the Nordic respondents feel that AI has decreased their job security.

While it seems like a small share, it's important to consider the broader implications. As AI continues to evolve and integrate into more job roles, this percentage could grow.

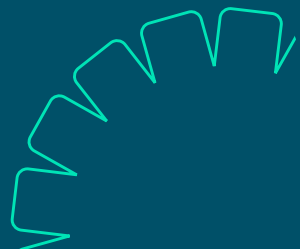
Addressing concerns early can prevent larger issues in the future.

6%

*AI has
decreased my
job security*

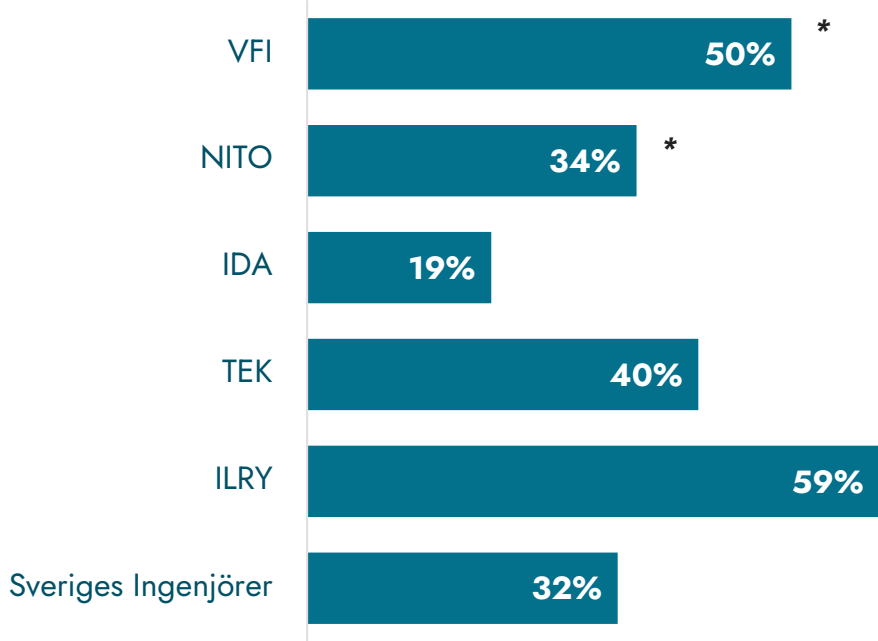
Nordic average

The concerns associated with AI's adoption at work



Level of concern about AI and privacy

Very or somewhat concerned about their privacy related to the implementation of AI at their workplace

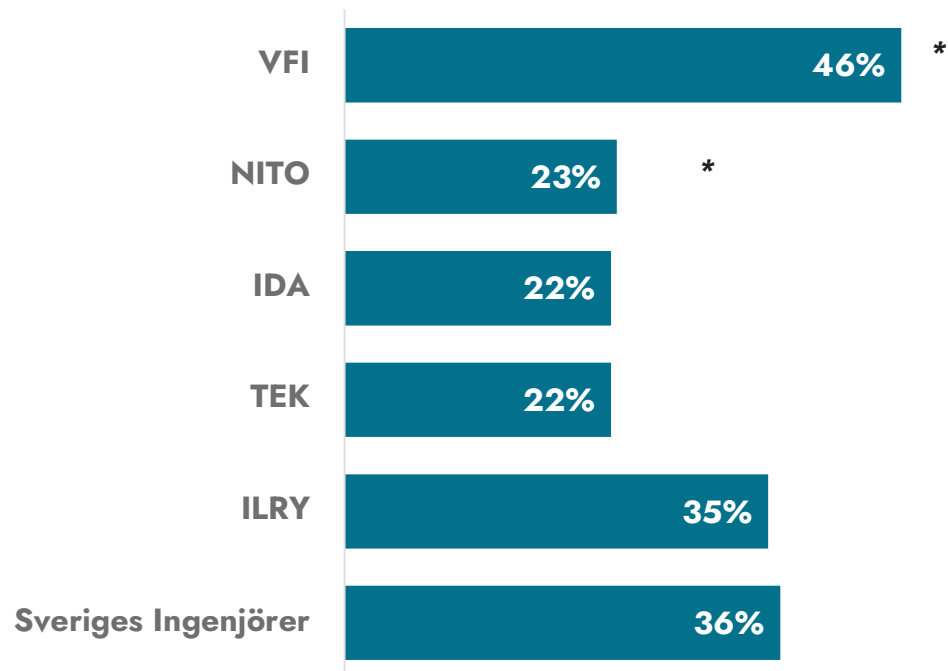


- A majority are not concerned. However, 2 in 5 (39%) express worry about their privacy with AI implementation. This indicates that a substantial portion of the STEM workforce has reservations.
- This concern is not uniform across all countries and organizations. For instance, the concern is notably higher among members of ILRY, with 59% expressing worry, compared to only 19% among members of IDA.

Base: Members from Sveriges Ingenjörer: 870, ILRY: 8114, TEK: 6283, IDA: 290, NITO: 654 VFI: 1358
* There are slight differences in the question formulation and answer scales used by VFI and NITO.

Level of concern about bias and discrimination in AI

Very or somewhat concerned about bias and discrimination when it comes to the implementation of AI at their workplace



A majority are not concerned about bias and discrimination in AI. However, 1 in 3 (31%) are concerned about bias and discrimination in AI implementation at their workplace.

This suggests that there is a notable level of awareness and apprehension about the potential for bias and discrimination in AI among STEM professionals in the Nordic region.

The extent of concern varies by country and organisation. From 22% to 46%.

Base: Members from Sveriges Ingenjörer: 868, ILRY: 8097, TEK: 6283, IDA: 289, NITO: 668 VFI: 1358

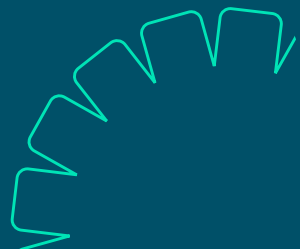
* There are slight differences in the question formulation and answer scales used by VFI and NITO.

This leads to several questions...

The high level of concerns about bias, discrimination and privacy that Nordic engineers and STEM professionals express when AI is used in their workplace leads to several questions:

- ❖ We see some great variations in numbers. What factors contribute to the disparities?
- ❖ How does the level of concern about privacy impact the overall acceptance and integration of AI in the workplace?
- ❖ How can companies improve communication and transparency about AI usage to alleviate privacy concerns?
- ❖ What specific privacy policies and protections can be implemented to address these concerns?
- ❖ What steps can organisations take to address the concerns of employees who are worried about AI bias and discrimination?
- ❖ What can unions and policymakers do?

Nordic STEM professionals
lack *AI training and
guidelines*



AI Training Gaps Among STEM professionals

There appears to be a significant gap in AI training among Nordic STEM professionals, with only 8% of professionals reporting they have received adequate upskilling.

This lack of training can hinder both individual and organizational growth, as employees may not be fully prepared to leverage AI technologies effectively and responsibly.

8%

*Yes, I have received
sufficient AI re-skilling
or up-skilling*

Few Employees See AI Guidelines

Only 23% of professionals believe their company offers extensive AI policies or guidance.

This raises questions about whether companies are providing adequate support and information on AI usage, and whether existing policies meet the needs of the workforce.

Without clear guidelines, employees may feel uncertain about how to use AI tools appropriately, which can lead to inconsistent practices and potential misuse of AI technologies.

23%

believe their company offers extensive AI policies or guidance

Involvement in AI Tool Development

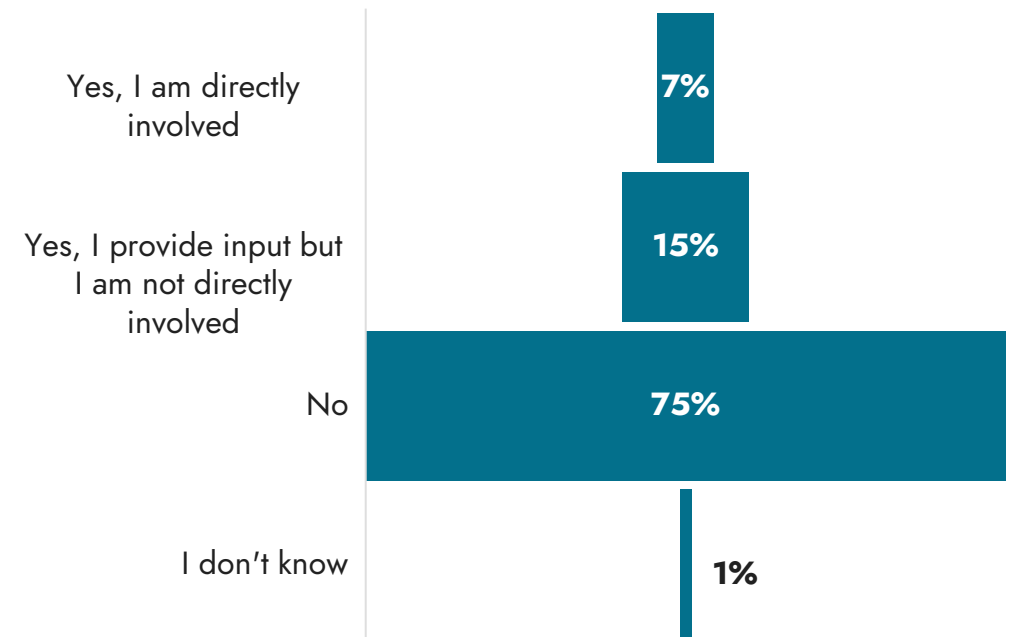
There is a low level of involvement in AI tool development among STEM professionals.

Three out of four STEM professionals (75%) are not involved in the design or development of AI tools at their workplace.

This could indicate, that the skills of STEM professionals are not being fully utilised.

It could also lead to a lack of engagement which can stifle innovation and prevent AI tools from being designed with practical, real-world applications in mind.

Are you involved in the design or development of the AI tools your company uses or is planning to use?

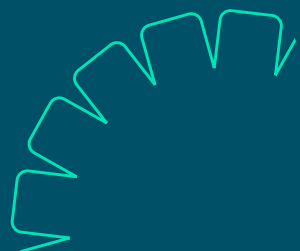


2020 Hackathon & 2024 Survey: Addressing AI development challenges

- ANE conducted a hackathon with professional engineers in 2020 aimed to explore the challenges faced by engineers in integrating ethical principles into AI development.
- The findings from 2020 highlight a critical need for enhanced training, clearer guidelines, and greater involvement of engineers in ethical decision-making processes regarding AI technologies.
- Overall, the ANE's 2024 survey provides a contemporary validation of the concerns raised in the 2020 report, highlighting that the need for improved training, clearer policies, and greater involvement of engineers in AI development remains critical for Nordic organisations and individuals to fully leverage AI technologies effectively and responsibly.
- Addressing these challenges requires a concerted effort to provide more targeted and comprehensive AI training, clear and supportive AI policies, and greater involvement of professionals in AI development.



About the *Association of Nordic Engineers*



Association of Nordic Engineers

- ANE is a cooperation between the trade unions representing engineers in the Nordics.
- These unions include Sveriges Ingenjörer, IDA, NITO, VFI, and Engineers Finland.
- ANE currently stands as the voice of over 500,000 engineers in the Nordic countries, championing their interests and advancing their common goals.
- [#ListentoEngineers](#)



Thank you



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