Empowering Women through Knowledge and Skills on Coding for Employment Opportunities Information Technology Sector

ENCODE-IT

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Why Code with AI?

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1.1. Introduction: The New Way of Creating with AI

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For many years, technology seemed **distant and complex**, filled with strange symbols and long lines of code that only experts could understand. Building a website or an app required years of technical study. **Artificial Intelligence** is transforming that reality and **making technology simpler, more intuitive, and accessible to everyone**, even those without a technical background.

However, something extraordinary is taking place today. Artificial Intelligence (AI) is revolutionizing technology and making it easier to use. AI is facilitating the creation, design, and innovation of people from a wide range of backgrounds, including those with little to no computer experience.

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1.1. Introduction: The New Way of Creating with AI

Artificial intelligence (AI) is a type of technology that allows computers and digital devices to imitate human learning, comprehension, problem-solving, decision-making, creativity, and autonomy. It can learn from data, see patterns, and **provide logical responses**, but it obviously lacks emotions and beliefs.

- When your phone suggests the next word while you type.
- When Netflix or YouTube recommends something you might like.
- When you use Google Translate to understand another language.

AI helps computers understand our language and respond in ways that feel natural and useful. It's like giving the computer a bit of "common sense".

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From Traditional Coding to AI-Assisted Creation

Coding is the process of giving computers instructions so they can perform tasks. Every digital device, from phones to cars, relies on code to function. Because computers don't understand human language, coding acts as a bridge, translating our words into **commands the machine can execute.** Traditionally, learning to code required mastering programming languages such as Python or JavaScript, which could be challenging for beginners. AI is changing this. Instead of writing complex lines of code, anyone can now describe what they want in **plain language**, and AI generates the **code automatically.**

This new approach, known as **AI-assisted coding,** removes barriers and allows anyone, even without technical training, to design apps, manage projects, or build digital tools. For example, a simple line of code such as **print("Hello, world!")** tells the computer to display the message Hello, world! on the screen. It's a small but classic example of how humans communicate with machines through programming.
You could simply say, **"Write a small program that shows the message 'Hello, world!' on the screen,"** and the AI will create it for you.

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AI as a Creative Partner

The fact that AI enhances human creativity rather than replaces it is among its most intriguing features. AI can be thought of as a "co-pilot" or creative assistant that assists you in putting your ideas into action. Although you still make the decisions, AI speeds up your process, helps you avoid errors, and opens up new options.

Imagine this:

- You have an idea for a small online store. AI can help you design it.
- You want to organize your family budget. AI can help you create a simple calculator.
- You dream of writing a blog or teaching something online. AI can help you format your content, find the right words, and make it look professional.

These are things you can do right now, with tools that are already free and available to everyone.

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1.2. The Transformation of Technology

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Technology has always advanced to make life easier, from simple tools to intelligent machines. Early inventions like water wheels and windmills introduced the **first automation**, while the **Industrial Revolution** brought steam engines and factories that replaced manual work. In the **20th century,** electricity, computers, and later robotics and the internet transformed how we live and work, making processes faster, smarter, and more connected than ever.

Traditional automation follows exact instructions written by humans. The machine can only do what it is told, nothing more, nothing less. But **AI can learn from information, recognize patterns, and make decisions.**

- **Automation** is like following a recipe step by step.
- **AI** is like a chef who learns new recipes by watching and experimenting.

This means that AI can improve over time, becoming smarter and more helpful without someone rewriting all the instructions.

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Coding with AI: A New Way to Create

In the past, automation systems and software were built by programmers who knew how to write complex code. Every detail and instruction had to be typed by hand. But now, AI has changed the way we create technology.

Coding with AI means that you can describe your idea in normal language, and the AI helps you turn it into something functional, like a piece of code, a design, or a written text.

Here are some examples you may already recognize:

- ChatGPT can understand natural language and write or explain code, text, and ideas.
- GitHub Copilot suggests the next lines of code for programmers automatically, helping them write faster and with fewer mistakes.
- Canva Magic Write allows you to describe what you want to design, and the system creates it for you, from social media posts to full presentations.

These tools are examples of AI-assisted creation. They demonstrate how computers are evolving into collaborators that work with people rather than being machines that only follow commands.

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1.3. Accessibility and Democratization of AI

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Traditional coding was based on precision and repetition. Every action had to be defined by the human. If one small symbol were missing, the program might fail. AI-assisted creation, on the other hand, works more like a conversation. You can give the AI a simple instruction, called a prompt, and it interprets what you mean.
For example: “Create a short program that calculates the total cost of groceries.”

The AI will instantly write the code, explain how it works, and even offer improvements. This makes technology more interactive and intuitive, allowing anyone to experiment and learn by doing.

AI has also made it possible to go beyond code writing. It can now help design, test, and improve digital tools automatically. For instance, if there’s a mistake in the code, AI can detect it, correct it, and explain the reason. This ability to “learn” and “self-correct” is one of the most revolutionary aspects of modern technology.

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No-Code and Low-Code: Building Without Barriers

Another important transformation is the rise of no-code and low-code platforms. These are tools that allow people to build apps or websites without typing code at all. Instead, you can drag and drop blocks, choose options, and describe what you want to achieve.
For example, imagine designing a digital form. Instead of coding it line by line, you can use a no-code tool to:
Add a text box for someone's name,
Insert a button that says "Submit," and
Automatically save the answers to a list.

It's like using digital building blocks as simple pieces that you can combine in creative ways. This makes technology accessible to programmers and also to entrepreneurs, teachers, community leaders, and anyone who has an idea to share. AI helps people learn and comprehend how technology functions in addition to speeding up coding. When you ask AI to write code, it can provide examples, alternative solutions, and an explanation of each component's function. It turns into a growth-oriented learning partner that adjusts to your level.

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1.4. Responsible and Ethical Use of AI

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1.4. Responsible and Ethical Use of AI

AI can be a powerful tool, but it must always respect human values. Using AI responsibly means making sure that the technology helps people, protects privacy, and does not cause harm. We all share responsibility for how AI is used.

Responsible AI means:

- Being honest about how AI is used and giving credit for generated content.
- Being critical of AI results.
- Protecting personal data and never sharing sensitive information with AI tools.
- Remembering that AI should support human decisions, not replace them.

To ensure that Artificial Intelligence serves people and society fairly and responsibly, the European Union developed the concept of Trustworthy AI in 2019.

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1.4. Responsible and Ethical Use of AI

According to the European Commission's High-Level Expert Group on AI, an AI system can be considered trustworthy when it is lawful, ethical, and robust. This means that it follows all applicable laws and regulations, respects human rights and shared moral values, and operates safely and reliably, even when unexpected problems occur.

The Guidelines identify seven key requirements that help make AI systems safe, transparent, and fair. These can be summarised as follows:

1. **Human agency and oversight –** AI must empower people, support human rights, and always allow human control and supervision.
2. **Technical robustness and safety –** AI should be reliable, secure, and include safeguards to prevent or minimize harm.
3. **Privacy and data governance –** AI must protect personal data and ensure that information is managed responsibly and transparently.

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1.4. Responsible and Ethical Use of AI

5. **Diversity, non-discrimination, and fairness –** AI must be inclusive, accessible, and free from bias or discrimination.
6. **Societal and environmental well-being –** AI should contribute positively to people, communities, and the planet, promoting sustainability.
7. **Accountability –** Clear responsibility must exist for AI systems, including audits and mechanisms to correct errors or unfair outcomes.

For learners entering the digital world, these guidelines highlight the importance of ethical awareness and diverse participation, because when more voices and perspectives are included, AI becomes more trustworthy and more beneficial for society as a whole.

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Green AI and Energy Awareness

As Artificial Intelligence becomes part of our daily lives, it is important to use it responsibly and sustainably. Every action we take online, from running a program to storing data, uses energy and resources. We can preserve the environment and use technology for the benefit of all by learning how to use AI responsibly.

AI systems rely on electricity and large amounts of data. The more efficiently we use technology, the smaller our environmental footprint will be.

Small choices can make a big difference:

- Prefer paperless learning and digital collaboration instead of printing.
- Close unused browser tabs or apps to reduce energy use.
- Use cloud storage instead of physical drives when possible.
- Reuse and recycle devices, and avoid unnecessary upgrades.
- Choose software and platforms that are energy-efficient or follow green IT policies.

This supports the EU's Green Transition goals and helps ensure that technology benefits both people and the planet.

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1.5. Breaking Barriers: From Fear to Confidence

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For many people, technology has always seemed like something distant, complicated, technical, and sometimes intimidating. Phrases like “I’m not good with computers” or “I’ll probably make a mistake” are still common. These feelings are natural, especially if you have never worked with digital tools before. The truth is that fear of technology often comes not from inability, but from lack of exposure and confidence.

Learning something new, especially something that once felt out of reach, can be uncomfortable at first. Many people worry about pressing the wrong button, breaking something, or not understanding the “technical language.” But the good news is, AI is changing this experience completely.

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1.5. Breaking Barriers: From Fear to Confidence

AI tools are designed to help, guide, and adapt to your pace. When you use AI, you can ask questions in your own words, get explanations step by step, and even receive examples or visual demonstrations.
For example, if you don't understand a coding concept, you can ask an AI platform like ChatGPT:

"Can you explain this to me in a simple way?"

And it will respond clearly, as a personal tutor would. AI also helps you learn from your mistakes without judgment. You can try, fail, and try again, and the system will keep assisting you patiently.
This flexibility is what makes AI such a powerful learning partner. It adapts to your level, gives instant feedback, and celebrates progress rather than perfection.
The most powerful skill you can bring to this journey is confidence, not in knowing everything, but in believing that you can learn anything.

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1.6. Real Life Examples

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1.6. Real Life Examples

Artificial Intelligence is already part of our daily lives, often without us realizing it. Every time you use your phone's voice assistant, translate a message online, or ask for movie recommendations, you are interacting with AI. But AI can also be used creatively to design, write, organize, and build.
The following examples show how simple it is to create something useful, even without technical experience.

1. Writing and Communication – ChatGPT and Copilot

Imagine you need to write a presentation, prepare social media posts, or describe a product for your small business. In the past, this could take hours of thinking and rewriting. Now, tools like ChatGPT or Microsoft Copilot can help you write faster and better.
You can simply type a request such as:
"Write a short description of handmade jewelry inspired by nature."
Within seconds, the AI creates a professional text that you can edit and adapt. These tools can also translate, check grammar, or simplify complex sentences, making communication clearer and more confident.

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1.6. Real Life Examples

2. Design and Creativity – Canva Magic Write and Adobe Firefly

You no longer need to be a designer to create beautiful visuals. Platforms like Canva Magic Write or Adobe Firefly, use AI to turn your words into images and designs.

For example, you could write:

“Create a logo for a bakery called ‘Sweet Morning’, using pastel colors and a coffee cup.”

In seconds, the AI shows multiple logo options. You can choose your favorite, change colors, and download it. This helps small entrepreneurs, teachers, and community organizers express their creativity easily without needing expensive design software or professional training.

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1.6. Real Life Examples

3. Organization and Planning – Notion AI and Google Bard

AI can also make everyday tasks more manageable. Tools like Notion AI or Google Bard help you plan and organize your life or work.

You can ask the AI to create a weekly schedule for studying or managing a project, write a to-do list based on your goals, or summarize long documents or meeting notes. These tools act as digital assistants that save time and help you focus on what matters. They are especially useful for people balancing work, family, and learning.

4. Coding and Problem Solving – Replit Ghostwriter and GitHub Copilot

Even if you've never written code before, AI can help you take your first steps. Platforms like Replit Ghostwriter or GitHub Copilot allow you to describe what you want in normal language, and they generate the code for you.

For example: "Write a simple program that asks for a person's name and says hello."

The AI instantly creates the code and explains what each part does. You can experiment safely, learn by observing, and build your confidence step by step.

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