Vocational English IV
(Mesleki Yabancı Dil IV)
Week 9

Engineering Faculty
Computeer Engineering

Prepared by: Dr Ercan Ezin

Google I/O

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20 Mayıs Salı-20:00-22:00

21 Mayıs Çarşamba-20:00-22:00

INTRODUCTION

THIS WEEK WE WILL WORK ON

# Artificial Intelligence (AI)

WILL AI REPLACE SOFTWARE ENGINEERS?

The concern about developers **potentially** being replaced by AI is a hot topic, and is currently being discussed on many platforms. While it's an **irrational** worry — due to the increasing number of uses of AI in software development — we do need to **take a closer look** at what AI is currently **capable of**.
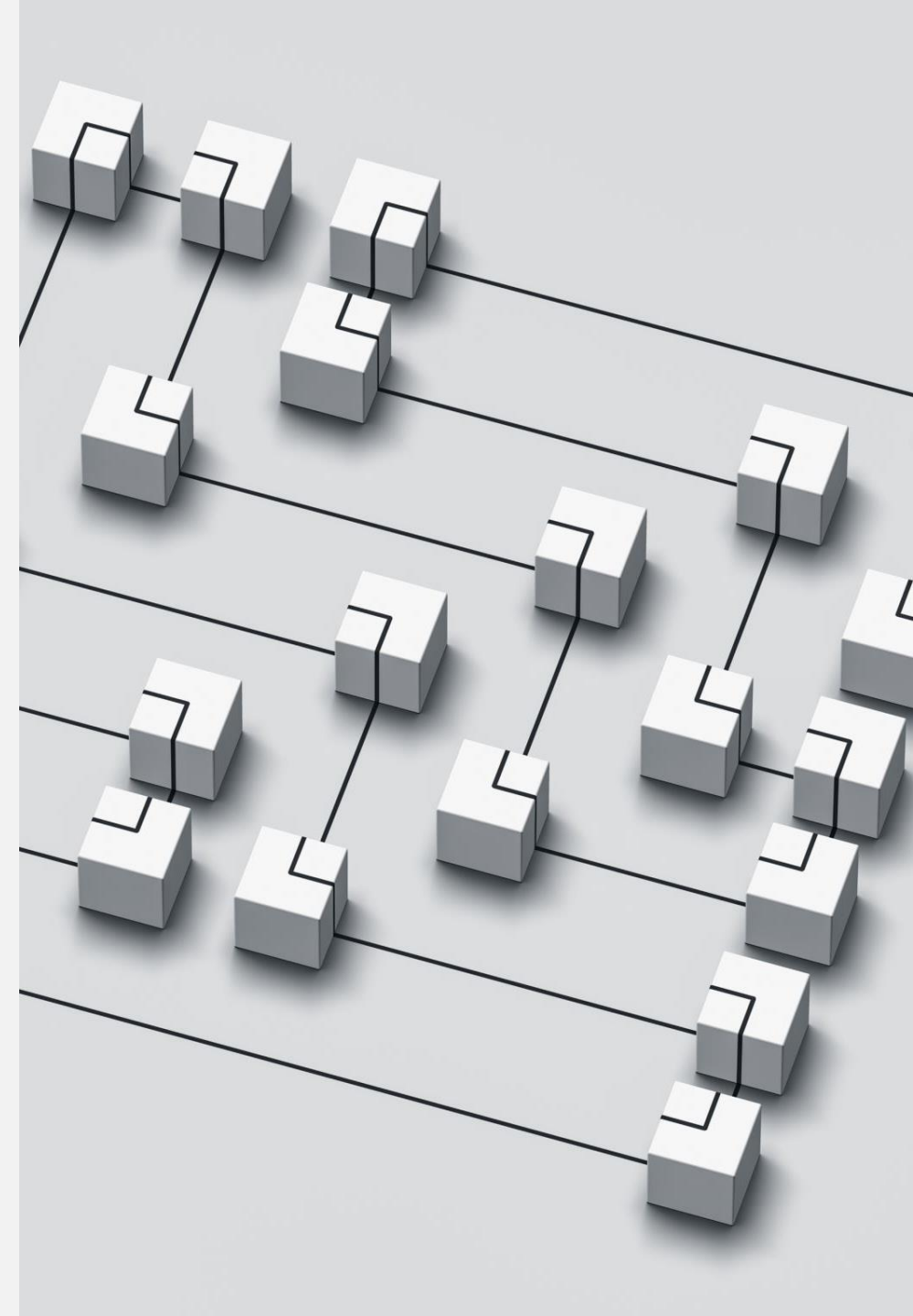
AI'S ROLE IN SOFTWARE ENGINEERING

- It's pretty clear to us by now that AI is great at automating tasks such as testing, and debugging, thereby improving efficiency. It can also analyse code for vulnerabilities and suggest improvements and has the potential to develop more intelligent and sophisticated software.
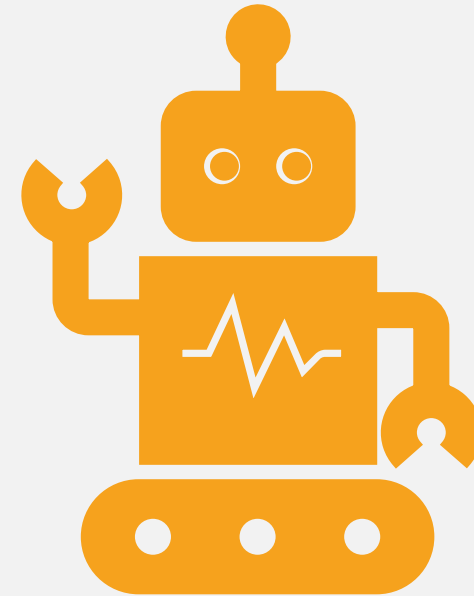
KEY IMPACT AREAS OF AI

Here are some of the key areas where AI is having an impact:

- Code generation and completion

- Code review and testing

- Debugging and problem-solving

- DevOps and automation – Provisioning infrastructure, deploying code, and monitoring the performance of apps.

- Create intuitive user interfaces

- Software maintenance

ENHANCEMENT, NOT REPLACEMENT

- As you can see, AI is mostly used in software engineering to **enhance** rather than replace human abilities. While AI is excellent at the **monotonous** and routine aspects of coding, it is not as creative or problem-solving as it needs to be for more complex and **innovative** software projects. **More on this later.**

HOW IS AI BENEFICIAL?

- AI should be looked at as a positive **rather than** a negative. Its ability to **automate repetitive tasks**, improve code quality, **enable** new software development methodologies, and personalise the software development experience **means** human developers have time to focus on more complex tasks that AI just isn't capable of.

A TOOL TO BOOST PRODUCTIVITY

- Look at AI as a **tool**. Something that can **complement** your skills and enhance your productivity. However, as AI **evolves**, we will definitely see more **transformative** applications. So it's best not to get too comfortable in your current role (more on that further down).

AI'S OVERALL IMPACT ON DEVELOPERS

To give a fair picture of how AI affects software engineers, let's examine the advantages as well as the drawbacks. The negative effects of AI can be:

Outdated skills: Some of the **conventional** skills used by software engineers are losing importance as AI takes over basic coding **chores**. AI cannot readily manage new skills like system design or technology integration, so engineers must **pick them up.**

Risks to jobs: Because AI can perform certain tasks more quickly and effectively, software engineers — especially those who specialise in fundamental coding — may have fewer jobs overall. **According to McKinsey**, automation might **put up** to 7.5 million development-related professions **in danger** worldwide.

Less creativity: There is worry that the work may **shift** from being creative problem solvers to being more about controlling and **adjusting** AI outputs as AI takes over more of the coding. For those developers that relish the creative aspect of coding, this could make the job less interesting.

And these are some of the positive effects:

POSITIVE EFFECTS OF AI

New employment opportunities: AI is not limited to **automation**; it is also generating new employment in machine learning, data science, and cybersecurity. Deeply understanding AI and being able to apply it to practical issues are needed in these sectors.

Increasing productivity: Copilot from GitHub and other AI assistants enable software engineers to produce work more quickly and with fewer errors. As such, they may devote more time to the challenging aspects of projects, such as developing **fresh concepts** or resolving **intricate** issues.

Better learning and collaboration: AI is **undoubtedly** revolutionising the way software engineers collaborate and learn. AI-powered tools **facilitate** the **acquisition** of new abilities by customising learning to each individual's requirements and speed. AI **enhances** code reviews, finds problems, and even simulates pair programming, which facilitates teamwork — especially when members are **dispersed**.

FINAL THOUGHTS AND FUTURE OUTLOOK

- **Working across domains**: AI can be widely applied outside of the tech industry. Software engineers can thus work on **initiatives** in healthcare, finance, and even environmental technology, which can include more than just writing code.
For software engineers, AI brings challenges like the need to continuously improve skills and potential job shifts. However, it also offers opportunities to work more creatively across different sectors. The key is for software engineers to **see** AI as a tool that enhances their work, not as a **threat**.

LISTENING ACTIVITY

https://www.youtube.com/watch?v=6sVEa7xPDzA
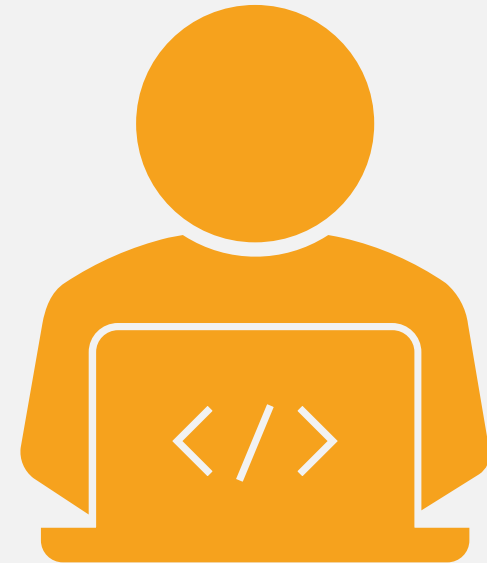
Is this the end of Software Engineers?

PRESENTATION TIME!

Overall 20%

5% Introduction of self and the topic
10% Presentation content(English is favoured)
5% Presentation skills and using English

You have 5 Minutes, make it count!

WORDS OF THE WEEK

1. **Artificial Intelligence (AI)** Computer systems able to perform tasks normally requiring human intelligence.
2. **Automation** The use of machines or software to perform tasks without human help.
3. **Algorithm** A set of rules or instructions given to an AI system to help it solve problems.
4. **Machine Learning** A type of AI where systems learn and improve from experience without being explicitly programmed.
5. **Model** A trained mathematical system used by AI to make predictions or decisions.
6. **Natural Language Processing (NLP)** A field of AI that helps machines understand and respond to human language.
7. **Code generation** AI creating lines of programming code based on instructions.
8. **Debugging** The process of finding and fixing errors in software code.
9. **DevOps** A method that combines software development and IT operations using automation.
10. **Infrastructure** The underlying system (hardware/software) that supports applications and services.
11. **Productivity** The effectiveness of productive effort, often improved using AI tools.
12. **Collaboration** Working together — AI tools help teams communicate and build software together.
13. **Customisation** The act of modifying software or learning experiences to fit individual needs.
14. **Deployment** The process of delivering and launching software or updates.
15. **Simulation** A digital imitation of a process, often used for training or testing by AI.
16. **Job displacement** When jobs are lost because machines or AI can do the same work.
17. **Efficiency** Doing tasks well and quickly with minimal waste — often increased by AI.
18. Predictive tools **Software that can make predictions about future events bas**ed on data.
19. **Supervision** Overseeing or managing something — humans supervise AI systems.
20. **Integration** The process of combining AI with other systems or software solutions.

PS: Keep a journal where you note these words with their meanings and usages in a sentence.

EOF*

*End of Fun/File