



# NTNU

Kunnskap for en bedre verden

## Department of Computer Science

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# Exercise 1 - Requirements document

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## Assumptions

- We assume that we are only supposed to extract user stories from the interviews, not deliver a complete requirements document covering every minute part of the system.
- We assume that the requirements document should only consist of user stories from the stakeholders in the interviews, not others such as developers or lawyers.
- We assume that the AI guidebook does not contain its own AI model, and that we should not extract requirements related to such a feature.

## Improvements

- Added assumptions to clarify our understanding of the deliverables
- Changed “normal users” to “students”, to avoid unclear user groups, and all the changed user stories also apply to students.
- Added user stories 1-3, marking basic functionality that other user stories were dependent on, as mentioned in the feedback.
- Added user story 20-26, to better include the ireAgents wishes for an admin account and the end users for the application as mentioned in the feedback

## Task 1.1

### Transcript 1: iRE Agent interview

**Question:** Since the students have already adapted AI into their work methods and will not stop using AI, in what direction do you want to encourage the students to use it? What do you find to be vital in student use of AI to encourage learning?

**Answer:** It's essential to encourage students to use AI as a supportive tool that enhances their learning rather than a crutch that undermines their academic integrity. Vital aspects include promoting responsible usage by clearly understanding ethical guidelines, ensuring transparent documentation of AI contributions, and reflecting critically on how AI impacts their learning processes. Additionally, fostering a mindset of using AI to complement their skills, such as enhancing research or improving writing quality, will be crucial in guiding their educational journey.

**Question:** In what way does AI strengthen or improve the learning processes you talk of?

**Answer:** AI can strengthen learning processes by providing personalized support tailored to individual student needs, enhancing research and reflection capabilities by quickly

aggregating and summarizing relevant information, and offering writing assistance to improve clarity and coherence. Additionally, AI tools can facilitate practice and feedback loops, allowing students to refine their understanding and skills in real-time. This ultimately encourages deeper engagement with the material and promotes critical thinking, as students learn to evaluate AI-generated content against their own knowledge and insights.

**Question:** What should the AI be used to avoid on the other hand? What do you believe disrupts these learning processes?

**Answer:** AI should avoid promoting dependency, where students rely solely on AI for answers without reflecting and engaging critically with the material. It should also steer clear of providing misleading or inaccurate information, which can undermine students' understanding and trust in the learning process. Additionally, neglecting transparency in how AI-generated content is produced can disrupt the development of students' own skills and diminish their ability to evaluate sources critically. It's vital that students maintain a balance between using AI as a tool and actively participating in their learning journey.

**Question:** Reflection and practice seems to be important. How does the AI guidebook encourage or improve these learning methods?

**Answer:** The AI Guidebook encourages reflection by providing structured prompts that guide students to think critically about their AI usage and its impact on their learning. It facilitates practice through features like usage logging and assignment-level AI declarations, which compel students to actively document and assess their AI interactions. By visualizing usage patterns over time, students can identify areas for improvement and reflect on their learning strategies, ultimately fostering a more engaged and responsible approach to their academic work.

**Question:** Design wise, what do you think the interface should look like? Are there any styles, coloring or setups that will improve the learning environment?

**Answer:** The interface should be clean, intuitive, and user-friendly, promoting ease of navigation. A color palette that incorporates neutral tones, such as blues and greens, can enhance focus and reduce cognitive load. The layout should prioritize clarity, with well-defined sections for logging AI usage, accessing guidelines, and visualizing data. Interactive elements, like dashboards and feedback prompts, should be prominent to encourage engagement while maintaining a consistent design language that reinforces the educational purpose of the application.

**Question:** Should the styling be any different for admin / teacher GUI's?

**Answer:** Yes, the styling for admin or teacher GUIs should differ to reflect their distinct roles while maintaining overall consistency with the student interface. Admin interfaces can use a more structured layout emphasizing data management and oversight tools, with colors that convey authority, such as darker shades or contrasting highlights. Clear categorization of features like usage analytics, compliance checks, and reporting should be prioritized, ensuring that educators can efficiently access and interpret data to support students' learning processes.

**Question:** You mentioned "Admin interfaces can use a more structured layout emphasizing data management and oversight tools", what kind of tools and data management is a must have?

**Answer:** Essential tools for admin interfaces should include user management dashboards, AI usage analytics, compliance monitoring systems, and reporting functionalities. Data management features must facilitate tracking user interactions, generating detailed usage reports, and ensuring data privacy compliance. Additionally, tools for managing ethical guideline updates and user feedback mechanisms will support continuous improvement and oversight.

**Question:** Can you describe specific requirements for the compliance and reporting functionalities?

**Answer:** The system shall provide a compliance monitoring feature that automatically checks user AI usage against institutional guidelines, generating alerts for any discrepancies. The system shall allow administrators to generate usage reports, detailing individual and aggregate AI interactions, including timestamps and assignment references. Additionally, the system shall facilitate the export of compliance reports in standard formats (e.g., PDF, CSV) for internal review and audit purposes. Finally, the system shall include a dashboard for visualizing compliance trends over time, enabling proactive adjustments to guidelines as necessary.

**Question:** Let's go further into specific functions. What should a dashboard overviewing usage patterns of AI look like and include?

**Answer:** The dashboard should provide an at-a-glance summary of key metrics, such as total AI usage time, frequency of AI tool engagement, and a breakdown of usage by assignment type. It should include visual elements like graphs and charts to illustrate trends over time, enabling students to identify peaks in AI interaction. Additionally, sections for highlighting compliance with ethical guidelines, such as logged declarations, and areas for self-reflection prompts will enhance the learning experience. Customizable widgets could allow users to prioritize the information most relevant to their learning goals.

**Question:** What specific graphs and charts do you consider easy to interpret and appropriate for this use? Please come with examples.

**Answer:** For the dashboard, the following graphs and charts would be effective: 1. Line Graphs: To show trends in AI usage over time, illustrating how engagement fluctuates with different assignments or study periods. 2. Bar Charts: To compare usage across various AI tools, allowing students to quickly see which tools they engage with the most. 3. Pie Charts: To visualize the proportion of AI usage attributed to different assignment types, helping students understand where they rely on AI. 4. Heat Maps: To display usage frequency during different times of the day or week, giving insights into peak usage times and study habits. These visualizations should be clear and labeled, ensuring students can easily interpret and derive insights from their AI usage data.

**Question:** How do you imagine that Ai-use logging should be implemented? What should the timeline of actions needed to log one use look like? Should it be possible to send in bulk? What would be most user friendly and fitting NTNU's guidelines and vision for AI as a learning tool?

**Answer:** Ai-use logging should be implemented through a straightforward, user-friendly interface that prompts students to log their usage immediately after using an AI tool. The timeline of actions for logging one use could include: 1. Prompt Display: After using an AI

tool, a prompt appears asking if they wish to log the usage. 2. Input Fields: students fill in key details, such as the AI tool used, assignment type, and a brief description of how the AI contributed to their work. 3. Confirmation: A summary of the input is displayed for confirmation before submission. Bulk logging should be possible, allowing students to log multiple uses at once, perhaps through a simple form that allows batch entries for similar tasks or assignments. This approach aligns with NTNU's vision by ensuring compliance with academic integrity while promoting transparency and reflection in AI usage.

**Question:** Now that we have discussed the flow of logging, what attributes should the logs include? Maybe timestamps and categories, amongst others?

**Answers:** The logs should include the following attributes: 1. Timestamp: The date and time of the AI usage to track when interactions occur. 2. AI Tool Used: The specific AI tool employed for the task. 3. Assignment Type: Categorization of the work being done, such as research, writing, or problem-solving. 4. Description: A brief summary of how the AI contributed to the task, detailing the nature of the assistance provided. 5. Duration of Use: Time spent using the AI tool for better insights into engagement levels. 6. Compliance Status: A flag indicating whether the usage adheres to ethical guidelines, promoting accountability. These attributes will enhance the ability to analyze and reflect on AI usage in alignment with academic integrity standards.

**Question:** I assume the compliance status is not set by the user, but by the system automatically?

**Answer:** Correct. The compliance status should be determined automatically by the system based on predefined ethical guidelines and criteria set by the institution. This ensures objectivity and consistency in assessing whether the usage aligns with academic integrity standards, reducing the potential for user bias in self-reporting.

**Question:** Any other ideas on how to implement the assignment level AI declarations and the AI guidelines into the interface itself?

**Answer:** To implement assignment-level AI declarations and guidelines effectively, consider the following: 1. Integrated Declaration Prompt: When students create or submit an assignment, a dedicated section in the submission form can prompt them to declare any AI tools used, ensuring it is a step in the workflow. 2. Guideline Access: Provide context-sensitive help or tooltips next to the declaration fields that link directly to relevant AI guidelines, enabling students to reference ethical standards while completing their declarations. 3. Checklist Feature: Include a checklist of key ethical guidelines that students must review before logging their AI usage, enhancing accountability and ensuring they are aware of compliance requirements. 4. Visual Cues: Use color coding or icons to indicate compliance status in real-time as students fill out declarations, giving immediate feedback on whether their usage aligns with institutional guidelines. These integrations will promote transparency and encourage responsible AI usage while streamlining the process for students.

**Question:** Are there any other functions that are needed on the teachers side that we have not discussed yet?

**Answer:** On the teacher's side, the following functions would enhance their ability to support students: 1. Analytics Dashboard: A comprehensive overview of aggregate student AI usage data, including trends and compliance rates, enabling educators to identify areas needing

attention or intervention. 2. Feedback Mechanism: A system for providing feedback on students' AI declarations, highlighting areas for improvement or commendable practices in ethical AI usage. 3. Guideline Updates: An interface for teachers to update or modify AI guidelines based on evolving academic integrity policies, ensuring that students have access to the most current information. 4. Reporting Tools: The capability to generate reports on AI usage statistics, compliance trends, and individual student progress, facilitating informed discussions in class or during advising sessions. 5. Resource Sharing: A function for teachers to share supplementary resources or best practices related to AI usage, fostering an environment of continuous learning. These functions will empower educators to guide students effectively in their ethical use of AI tools.

**Question:** For the teacher to have an overview over the students, It will need a login and assign page to enroll students. Am I correct in this, and how should this be implemented?

**Answer:** Yes, a login and assignment page for enrolling students is essential for teachers to manage their classes effectively. This can be implemented as follows: 1. Login System: Teachers should have a secure login system that verifies their credentials, ensuring that only authorized personnel can access student data. 2. student Enrollment Interface: After logging in, teachers should access a dedicated enrollment page where they can add students by entering their details (e.g., name, email, student ID) and assign them to specific courses or groups. 3. Bulk Enrollment Option: Implement a bulk upload feature allowing teachers to enroll multiple students simultaneously via CSV or Excel files, streamlining the process. 4. Confirmation and Notifications: Once students are enrolled, the system should send confirmation emails to both students and teachers, ensuring everyone is informed of the enrollment status. 5. Management Tools: Provide options for teachers to edit or remove students from their classes, track participation, and monitor compliance with AI usage, ensuring effective oversight. These features will support teachers in managing their classes while promoting an organized approach to AI usage documentation.

## Transcript 2: student interview

Note: The transcript has been translated from Norwegian to English

**Question: Tell me about your current study situation.**

**Answer:** I am studying for a Master's degree in Computer Science at NTNU Gløshaugen and I am in my second semester. Many of the courses I am taking now require AI or encourage its use. This means that I use AI quite often while studying.

**Question: How do you use AI tools in your studies today (if you do), and how much do you think about your use of AI?**

**Answer:** I use Google's Antigravity and Gemini for general or less important use. I use ChatGPT because of the built-in Mac app. I also end up using AI unintentionally when I search on Google, since AI-generated answers often appear. I have not used Copilot in a while, mostly because I have not been coding recently. I use AI in Overleaf so I do not have to write the syntax myself. I also use other applications that integrate AI. I use AI for assignments if I am short on time.

**Question: When do you avoid using AI tools? Why?**

**Answer:** If I am trying to learn, I minimize my use of AI and instead use more traditional methods. However, this is difficult when Google provides AI-generated answers whenever I search.

**Question: What is your immediate reaction to this idea – useful, unnecessary, risky, annoying? Why?**

**Answer:** I see little reason for it, since AI declaration is very straightforward and does not require more detailed logging. I therefore do not think I would personally use it. I also have good control over my own AI usage, so I do not need a tool for this.

**Question: Which part of the application seems most valuable to you?**

**Answer:** If you are essentially "reporting on yourself," this does not seem like something that would be widely used. I do not want a tool to track my AI usage since I already have control over it myself. It could be useful to have an overview of whether my usage is within NTNU policies, without NTNU being able to see my actual usage. Being aware of this replaces the need for such an application. Another possible use case could be that each time you write a prompt, the system could check whether this could have been more effectively solved by a simple Google search. A comparison with other users would also be interesting. Tips on prompt engineering and model selection could also be useful.

**Question: Which part of the application concerns you the most?**

**Answer:** My issue is that I use AI for both school and personal purposes, so how would these uses be separated? I also do not want prompts that violate NTNU guidelines to become visible to NTNU staff or publicly accessible.

**Question: If logging took 60 seconds per session, would you do it? Why or why not?**

**Answer:** I would never log this manually unless I were paid. Logging must be automated. I do not want to spend extra time registering my AI usage.

**Question: If you had a dashboard for your AI usage, what would you want insight into?**

**Answer:** The first thing I think about is gaining insight into how good my prompts are and how I can improve my prompt engineering to achieve better results when using AI.

**Question: What would you not feel comfortable logging, or would avoid logging?**

**Answer:** I would not want private prompts and conversations that are not academic to be logged. I would also avoid logging poor prompts that violate guidelines if they could become visible to NTNU or the public and lead to consequences. Therefore, I would need to know that the data I submit is strictly academic.

**Question: Which features are absolutely essential for you to use this application?**

**Answer:** If I were to consider using it, it would need to have automated logging so I would not have to manually remember and record my AI usage, since I tend to use it frequently. Personally, I do not think the application itself is a “must have,” but extensive monitoring of usage data could be useful and provide valuable insights.

**Question: Since you would not personally use the application, who do you think it is suited for and why?**

**Answer:** Someone with less interest or knowledge might benefit more from the app. I think it would be more useful for people who know little about their own AI usage and want to improve or ensure they follow NTNU guidelines, especially because they may not know what good practice is or how to use AI properly.



# Requirements document

## User stories:

### Functional

1. As a student, I want to log all AI use in the AI guidebook system, so that the system can store and track my AI use.
2. As a student, I want to access NTNU's guidelines for AI use, so I can easily find them when they're needed.
3. As a student, I want a customizable dashboard, so I can visualize the logged AI use data.
4. As a student, I want to see a status on my logged prompts in my dashboard, so that I can see how well they follow [NTNUs policy for use of gen AI](#) and NTNUs educational concepts for AI.
5. As a student, I want the compliance check to notify me when the prompt I logged does not follow [NTNUs policy for use of gen AI](#), so that i can learn from it and fix any mistakes.
6. As a student, I want the compliance check to explain what is wrong with my AI-use, so I can learn and correct any mistakes.
7. As a student, I want to add a description to my logged prompt, so that I can reflect on whether or not the prompt helped me learn.
8. As a student, I want to be able to automatically generate an AI-declaration form based on my AI-use for an assignment, so that I can easily append the declaration to my assignments without having to do it manually.
9. As a student, I want the option to hide or delete prompts, so that teachers do not see prompts that break the AI guidelines or were meant for personal use.
10. As a student, I want a bar chart showcasing the quantity of prompts in the different categories of prompt types or activity types.
11. As a student, I want a timeline chart documenting my Quantity of prompts in different categories, so that I can see how my use of AI changes over time.
12. As a student, I want to log all my prompts for an entire session in bulk in under a minute, so that I do not have to interrupt my work session to log a single prompt, but rather log everything at once.
13. As a student, I want The application to give me an indication on whether a prompt could have been googled, so that I limit my Ai-use to only efficient prompts.

14. As a student, I want a mode that gives me feedback on my prompt and my choice of model, so that I can make each prompt more efficient.
15. As a student, I want to connect my accounts attached to AI-tools such as ChatGPT, Copilot, Gemini, etc., so that logging can be automated.
16. As a teacher, I want to create a tenant, where I can add students that are taking a course, so that all students taking that course can log AI-use for that course.
17. As a teacher, I want a .csv file for participants in a course, so that I don't have to manually add every student taking the course.
18. As a teacher, I want to see information on all AI-use logged in my tenant, so that I can quickly get an overview on how AI is used in my course.
19. As a student, I want to categorize my prompts into prompt types, so that the system can keep track over how I use AI tools
20. As an administrator, I want to view, create, edit, and deactivate user accounts through a dashboard so that I can manage access to the system.
21. As an administrator, I want to see aggregated analytics of AI tool usage, including number of interactions and usage frequency over time, so that I can understand overall usage patterns.
22. As an administrator, I want to generate anonymized AI usage reports for all users combined so that I can review activity.
23. As an administrator, I want to export AI usage and compliance reports in PDF and CSV formats so that they can be used for audits and internal review.
24. As an administrator, I want to see compliance data visualized over time using charts so that I can identify trends.
25. As an administrator, I want to create, edit, and update the ethical guidelines used by the compliance system so that policies remain current.
26. As an administrator, I want to get, view and manage user feedback submitted through the system so that I can use it to improve oversight and system functionality.

### **Non-functional**

1. As a student, I want the dashboard to use neutral colors, so that the dashboard is not visually distracting.
2. As a student, I want the prompts that involve reflection to be visually distinct, so that they are not overlooked when using the dashboard.

3. As a student, I want the application to be secure, so that my data is not leaked publicly.
4. As a student, I want to customize my own widgets so that I can prioritize the information I am most interested in on my dashboard
5. As a student, I want to see a heat-map on my default dashboard, so that I can easily see when throughout the day or week I use AI the most.