I noticed that many (e.g…) personalized cases follow a rule where examples are listed in bullet points (e.g…), but this (exactly what text should be written---?) is not mentioned in the Vita:CT\_00 article (---to what chaper?). I recommend adding this formatting rule to the wiki page. Please, send me a change-tracking-version with your EXACT recommendations!

😊

In CT\_00, the section “Basic Categories” lists examples using letters (a), (b), etc. This goes against the formatting rule in Vita:CT\_00 that says examples should be numbered.

Please, send me a screenshot! The wiki-article (CT\_00) presents in my version no letters for listing… (see deeply below)

Please, highlight the rule with green background colour (about the numbering) … (see Vita: CT\_00 here immediately following…)

😊

I recommend adding a chapter about “Application of category types in real-life projects.” This would help demonstrate practical use cases and align with student assignments.

Please, define a chapter-number for your new chapter…

😊

I understand that CT\_00 is for formal content (a real article with real content) while Vita:CT\_00 is for open discussion (rules for creating the real content). However, the CT\_00 page could benefit from a short introductory paragraph explaining this pairing concept for clarity.

Please, formulate your recommended text (introduction) into the article (deeply below) in form of change-tracking-signs (like these red text-elements here)

😊

Vita:CT 00

This discussion page helps to interpret what should be done in a particular chapter and why...

Final product: <https://miau.my-x.hu/mediawiki/index.php/CT_00>

History of the final product: <https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=history>

History of the discussion page: <https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=history>

**Tartalomjegyzék**

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Title[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=1)]

Optimization challenge: the better is a title the more is the number of keywords but the less is the length of the text

Subtitle[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=2" \o "Szakasz szerkesztése: Subtitle)]

(a new aspect can be visualized based on the same principle as before in case of the title)

Authors[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=3" \o "Szakasz szerkesztése: Authors)]

names (<https://orcid.org/>...),

Institutions[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=4" \o "Szakasz szerkesztése: Institutions)]

expected cover-sheet-elements incl. university, department, etc.

Abstract[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=5" \o "Szakasz szerkesztése: Abstract)]

One-pager-like chapter for conferences (c.f. IKSAD/Türkiye: <https://miau.my-x.hu/miau2009/index_en.php3?x=e080>). The abstract is not the summary, where citations might quasi only be listed about the most relevant statements of the publication. The abstract should deliver a kind of motivating information package - quasi without any citations: e.g. history of the project, descriptive core information about the problem, own steps and their results, future - maximal one single page.

Chapter#1. Introduction[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=6" \o "Szakasz szerkesztése: Chapter#1. Introduction)]

Between to chapters (e.g. 1. and 1.1.), it is necessary to have explaining texts - mostly about a kind of detailed/specific table of content with argumentations...

Chapter#1.1. Aims/objectives[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=7" \o "Szakasz szerkesztése: Chapter#1.1. Aims/objectives)]

A final thesis (a publication in general) might not formulate more aims than being really covered through the publication. In order to avoide the suspicions about potential realistic, but not realized aims/objectives, each promise should have a "CHAPTER#..."-sign, where the Readers will be capable of checking the real performaces behind each promise - immediately. These chapter#-signs can be empty, if the whole structure (table of content) is still fluid. But each empty sing should be filled with the appropriate numbers, if the details behind a promise could be formulated as a finally existing subchapter (mostly in chapter#3 - own development).

The aims may only be listed, if the basic definitions are given. The keywords of the (sub)title and each further relevant term should always and immediately be defined after the first using.

It is not forbidden to work with arbitrary high complexity. In this case: the Readers have to understand the XLSX-files before going on...

Important and general rule: if a plural form is used, then it is necessary to present examples: e.g. phylosophycal challenges (e.g. automation, nature/level of vierification), or arbitrary systems (c.f. encryption/decryption tasks for unknown-cyphers) or relevant keywords ... (c.f. concepts, verification, partial log-data) or different steps (task1, task2, task3, task4:interpretation of the hidden file), etc.

Recommended literature about keyhole-challenges: <https://miau.my-x.hu/myx-free/index_en.php3?x=fbl>, <https://miau.my-x.hu/myx-free/index_en.php3?x=iq>

Chapter#1.2. Tasks[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=8" \o "Szakasz szerkesztése: Chapter#1.2. Tasks)]

Rules: The list of the particular tasks should deliver a clear classification of steps without any overlapping effects and/or without any lacks. BTW: this expectation is valid for each lists in general. Tasks are also promises (as aims/objectives), therefore, it is also necessary to have a chapter#-sign for each task. Tasks are decisions of the Author(s), therefore, it is necessary to deliver argumentations for the rationality of these decisions.

Chapter#1.3. Targeted groups[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=9" \o "Szakasz szerkesztése: Chapter#1.3. Targeted groups)]

Rules: each potential targeted groups should be listed (see without overlapping and lacks) - and the argumentations must be given: why is a listed element rational? Targeted groups are potential customers, who should be capable of paying for the results of this project based on a real information added-value estimated by the Authors themselfes.

Chapter#1.4. Utilities (estimation of informational added-values)[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=10" \o "Szakasz szerkesztése: Chapter#1.4. Utilities (estimation of informational added-values))]

Rules: For each targeted group should be made an as far as exact estimation in USD or EUR about the information added-value. It is expected, that the estimations are positive values! Negative values means: parasitism through the IT-experts concerning their customers! Estimations have two layers: incomes and costs in the bechmark situation AND incomes and costs based on the results of the projects.

Chapter#1.5. Motivation[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=11" \o "Szakasz szerkesztése: Chapter#1.5. Motivation)]

Quasi arbitrary argumentation (in dependence with targeted groups AND informational added-values)...

Chapter#1.6. About the structure of the publication[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=12" \o "Szakasz szerkesztése: Chapter#1.6. About the structure of the publication)]

Bullet point formatting for examples

Proposed Rule: Examples in personalized cases should be listed using bullet points.

Rationale: Many personalized cases follow this convention, but it is not explicitly stated in Vita:CT\_00. Adding this rule would standardize formatting and improve readability.

Implementation: Update Vita:CT\_00 to include a rule specifying that examples must be presented in bullet points, especially in sections discussing case studies or personalized applications.

In this subchapter, it is necessary to write about ALL aspects which will only be mentioned but without deep details.

In this subchapter, it is also necessary to clarify ALL the used formats.

In this subchapter, the structure of the publication must be defined in advance.

Chapter#2. Literature[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=13" \o "Szakasz szerkesztése: Chapter#2. Literature)]

Rule: Consistent Use of Parenthetical Citations for Sources

Description: All citations in the text must use a parenthetical format (e.g., (Source: https://example.com)) immediately following the cited information, including a brief source description and URL where applicable.

Rationale: The document uses parenthetical citations (e.g., “Source: https://en.wikipedia.org/wiki/Software\_testing” in Chapter#2.1), but Vita:CT\_00 lacks a formal rule standardizing this format. A consistent citation style improves readability and verifiability, similar to how bullet points standardize example presentation.

Between two chapter-titles, it is necessary to have explanations about the structure of the particular subchapters.

This chapter is dedicated for all definitions, which are necessary to understand the own development, results. It is forbidden to have subchapters without any citation(s). Here, it is important to use citations with sources. Between two citations, it is expected, that the Author(s) deliver(s) argumentations about each citation: is a citation is to integrated or even to avoid? More precisely: each citation should be evaluated by the Author(s): either in a positive way (the particural statement of the citation will be integrated: chapter#... or in a negative way: the particural statement of the citation is to avoide).

Chapter#2.1. ...[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=14" \o "Szakasz szerkesztése: Chapter#2.1. ...)]

Chapter#2.2. ...[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=15" \o "Szakasz szerkesztése: Chapter#2.2. ...)]

Chapter#2.3. ...[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=16" \o "Szakasz szerkesztése: Chapter#2.3. ...)]

Chapter#2.4. ...[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=17" \o "Szakasz szerkesztése: Chapter#2.4. ...)]

Chapter#2.5. ...[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=18" \o "Szakasz szerkesztése: Chapter#2.5. ...)]

Chapter#2.6. ...[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=19" \o "Szakasz szerkesztése: Chapter#2.6. ...)]

Chapter#2.7. ...[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=20" \o "Szakasz szerkesztése: Chapter#2.7. ...)]

Chapter#3. Own developments[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=21" \o "Szakasz szerkesztése: Chapter#3. Own developments)]

The presentation of the own developments, experiments, idea, etc. must strict use the keywords inroduced (mostly based on citations, but also in form of own interpretation to the definition in the literature in chapter#2.

Chapter#4. Discussions[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=22" \o "Szakasz szerkesztése: Chapter#4. Discussions)]

Chapter#5. Conclusions[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=23" \o "Szakasz szerkesztése: Chapter#5. Conclusions)]

Chapter#6. Future[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=24" \o "Szakasz szerkesztése: Chapter#6. Future)]

Chapter#7. Summary[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=25" \o "Szakasz szerkesztése: Chapter#7. Summary)]

Chapter#8. Annexes[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=26" \o "Szakasz szerkesztése: Chapter#8. Annexes)]

Chapter#.8.1. Abbreviations[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=27)]

Chapter#.8.2. Figures[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=28" \o "Szakasz szerkesztése: Chapter#.8.2. Figures)]

Rule: Mandatory Inclusion of at Least One Own Figure

Description: Every publication must include at least one original figure (e.g., diagram, chart) created by the authors, presented in Chapter#8.2: Figures, to illustrate a concept or result.

Rationale: The document specifies that “Each publication must consist at least one figure from the literature and at least one own figure” (Chapter#8.2). While this is stated, it’s not formalized as a rule in Vita:CT\_00. Formalizing it ensures authors consistently include visual aids, enhancing comprehension, similar to how bullet points make examples more accessible.

Each publication must consist at least one figure from the literatur and at least one own figure.

Chapter#.8.3. References[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=29" \o "Szakasz szerkesztése: Chapter#.8.3. References)]

<https://miau.my-x.hu/mediawiki/index.php/BPROF_Thesis_Structure> / <https://miau.my-x.hu/bprof/Deepl%20-%20Thesis%20specialities%20of%20the%20BPROF%20training%20at%20the%20KJE.docx> / <https://miau.my-x.hu/temp/2025tavasz/?C=M;O=D>

Chapter#.8.4. Conversations with LLMs[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=edit&section=30" \o "Szakasz szerkesztése: Chapter#.8.4. Conversations with LLMs)]

Each publication must have at least one chapter, where relevant information units come from ChatGPT/Copilot (e.g. potential keywords, definitions, etc.). The entire conversations (prompts+ouputs) must be presented in the annex and the used details (citation) must be evaluated mostly in chapter#2.

CT 00

Final-thesis-like publication based on previous performances (see: <https://miau.my-x.hu/mediawiki/index.php?title=CT_01>)

Principles for editing: <https://miau.my-x.hu/mediawiki/index.php/Vita:CT_00>

History of the final product: <https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=history>

History of the discussion page: <https://miau.my-x.hu/mediawiki/index.php?title=Vita:CT_00&action=history>

**Tartalomjegyzék**

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Title[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=1)]

Which concepts can be verified based on partial data about log-information in an e-car?

Subtitle[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=2" \o "Szakasz szerkesztése: Subtitle)]

(or a cooperative experiment, how to create e.g. the chapter2 about literature in a final thesis)

Authors[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=3" \o "Szakasz szerkesztése: Authors)]

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Institutions[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=4" \o "Szakasz szerkesztése: Institutions)]

MY-X research team

Abstract[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=5" \o "Szakasz szerkesztése: Abstract)]

History of the project: The software-testing as such from point of view of a praxis-oriented education has to enforce real testing experiences - especially about softwares being given day-by-day in the education (e.g. <https://miau.my-x.hu/miau/320/moodle_neptun_tests/>, <https://miau.my-x.hu/miau/320/moodle_testing/>, <https://miau.my-x.hu/miau/320/teams_testing/>). On the other hand, it is not correct, if the term of testing is only focusing on ergonomy, functionality in a trivial way. Therefore, specific aspects are also important: e.g. <https://miau.my-x.hu/miau/320/moodle_cubes_logic/> about interpreting systems with seemingly correct functionalities and/or <https://miau.my-x.hu/miau/320/moodle_webkincstar/> about legal aspects of potential damages based on testing results. Finally, the testing as such approximate the challenge of concept testing (c.f. <https://miau.my-x.hu/miau/320/concept_testing/>), where the best concepts should be derived based on partial log-data about arbitrary systems (c.f. encryption/decryption tasks for unknown-cyphers).

Own objectives and results: This publication demonstrates a case about the negotiation process of 10+ experts concerning a tricky challenge, where partial (raw and derived) log-data of an e-car could be analyzed based on three concepts. 2 of them were totally correct from mathematical point of views, and one concept was a randomized set of potential interpretable numbers. The interpretation process had two levels: the first level made only a part of the existing data visible. On other level, all data could be seen. Parallel, to the case tadies based on human intuition processes, an AI-based approach must also be interpreted by human experts. The conclusions can be seen in this publication.

Future: The creation of the publication (as a kind of side effect) will also be used in the education to demonstrate a lot of rules concerning the writing process of a final thesis. On the other hand, the main motivation is always the automation: it is important, that human experts are capable of solving problems in an approximative way, but it is significantly more relevant to explore, how can we derive automations concerning the thinking processes of human experts.

Chapter#1. Introduction[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=6" \o "Szakasz szerkesztése: Chapter#1. Introduction)]

In this chapter, it will be necessary to clarify the basic information about the project: aims/objectives, tasks, targeted groups, uitilities (estimation of information added-values), motivation, about the structure of the study.

Chapter#1.1. Aims/objectives[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=7" \o "Szakasz szerkesztése: Chapter#1.1. Aims/objectives)]

The title signalize more relevant keywords needing at least a short definition (c.f. concepts, verification, partial log-data).

The data asset for task-definitions can be seen here: <https://miau.my-x.hu/miau/320/concept_testing/concept_testing_task_level.xlsx>. The whole analytical process can be interpreted here: <https://miau.my-x.hu/miau/320/concept_testing/concept_testing_v1.xlsx> There are 3 task levels (for each level there is a separate sheet "task1", "task2", "task3" - see \*task\_level.xlsx). The entire complexity (see \*\_v1.xlsx - including data and analytical steps) was a hidden file during the task-periode. Further files concerning solutions can be seen here: <https://miau.my-x.hu/miau/320/concept_testing/?C=M;O=D>.

Based on the above-mentioned files, the expression partial data means: parts of a complex systems are presented as task in order to motivate for explanations/interpretations. The situation is the same, as somebody has to report about a room based on a view through one/more key-hole(s).

Concepts as keyword means: based on the raw data and further calculated data, there are 3 hidden formulas and only the results of these hidden formulas are known in frame of the tasks. The inputs of the tasks is only data positions without any formulas.

Verification as keyword means: what kind of analytical steps lead to a situation, where it is possible to classify concepts as potential realistic or even potential irrealistic.

Based on these short definitions, the publication try to present a case study where (see the entire publication as such), where different steps (task1, task2, task3, task4:interpretation of the hidden file) are interpreted in a detailed way.

The experiment based on the data delivered in task1 can be found in chapter#...

The experiment based on the data delivered in task2 can be found in chapter#...

The experiment based on the data delivered in task3 can be found in chapter#...

The experiment based on the data delivered in task4 can be found in chapter#...

The entire publication tries to deliver interpretation possibilities to the term "verification". Verification can be derived manually (see chapter#...) or even in an automated way (see chapter#...). The manual-driven steps can have such a traps, where automation becomes impossible (see chapter#...).

Summa summarum: the whole publication tries to have influence to the thinking methodology of the Students in order to see practical steps behind phylosophycal challenges (e.g. automation, nature/level of vierification). The publication can be evaluated as understood, if the Reader think, (s)he is capable of deriving classifications concerning arbitrary concepts and (s)he is capable of deciding about a concept whether it it is rather realistic or rather irrealistic. It is also important, that the Readers see the third output-level: namely, not each concept may be evaluated based on the partical given raw data (see chapter#...).

Chapter#1.2. Tasks[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=8" \o "Szakasz szerkesztése: Chapter#1.2. Tasks)]

The aims/objective presented already the 3+1 tasks: 3 tasks are handling with concepts based on partial information. The last one (4th) demonstrates holistic/complete information.

Task1: Based on the particular information, which concept (A,B,C) seems to be rational or irrational? (see chapter#...)

Task2: Based on further particular information, which concept (A,B,C) seems to be rational or irrational? (see chapter#...)

Task3: Based on further new particular information, which concept (A,B,C) seems to be rational or irrational? (see chapter#...)

Task4a: Based on holistic/complete information, which concept (A,B,C) seems to be rational or irrational? (see chapter#...) AND

Task4b: How can be automated the most complex (most consistent) verification process? (see chapter#...)

Argumentations: The new and newer futher information units try to support the understanding process concerning more and more complex verification strategies. The tasks sould be solved in a step-by-step-way in order to ensure didactical impacts/effects in Students.

Chapter#1.3. Targeted groups[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=9" \o "Szakasz szerkesztése: Chapter#1.3. Targeted groups)]

The entire challenge is a didactical challenge. The step-wise progress is the learning process as such. The methodology is basing on trial-and-error-effects in individuals and in groups. Therefore, the targeted groups are individuals (as Students) and groups of Students. On the other hand: each learning material is a kind of support for teachers too. Therefore, teachers are also part of the targeted groups. Affected teachers are not only teachers having the same subject (c.f. testing), but each subject can also be supported through the phylosophycal (context free) aspects. Finally, instituions (management of institutions/universities) are also a kind of targeted group, because the castles of the sciences have to apply each teached knowledge in the own management processes.

Chapter#1.4. Utilities (estimation of informational added-values)[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=10" \o "Szakasz szerkesztése: Chapter#1.4. Utilities (estimation of informational added-values))]

There are now 4 targeted groups: individuals as Students, groups of Students, individuals as Teachers, manager of universities. The informational added-value is the difference between impacts without and with the results of this project minus costs. In ideal case: the projects does cause more positive impacts than costs compared to the benchmark where the projects results are not given. Estimations have two layers: incomes and costs in the bechmark situation AND incomes and costs based on the results of the projects.... (later)

Manager of universities:

* Benchmark: naive approach for daily marketing for motivating more Students to attendance
  + Costs: basically wages (where employees/experts are writting messages for the social media)
  + Impacts: in ideal case, the share of the particular university is not decreasing compared to the competitive institutions
  + Expectation: the income through the human activities must be higher than the costs of the human activities, atl least zero (0 EUR)
* AI-driven support:
  + Costs: redurced wages, but licence fees for AI (concept testing) - human experts produce concepts based on the particular data, robots are verifying concepts
  + Costs of the AI-oriented development (10.000 EUR/licence)
  + Impacts: in ideal case, the share of the particular university is massive increasing compared to the competitive institutions through the most realistic understanding of the marketing systems (e.g. 10.000 EUR/year)
* Conclusion: the investition into the AI-oriented development can be covered within 1 year

Chapter#1.5. Motivation[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=11" \o "Szakasz szerkesztése: Chapter#1.5. Motivation)]

This publication is an efficient case study concerning knowledge management, especially testing knowledge management processes among Students for better final theses and parallel, it is a real publication about a complex challenge: concept testing layers. Therefore, it is motivating to integrate to goals in one single action.

Chapter#1.6. About the structure of the publication[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=12" \o "Szakasz szerkesztése: Chapter#1.6. About the structure of the publication)]

The publication will concern mathematical aspects (see similarity analyses), but without such level of details, where this publication could be used for learning about the complex system of the similerities. This challenge is complex enough in order to handle in an other publication.

This publication tries to follow the strict pattern predefined for final theses in general, and especially for BPROF-Students. In this publication one single expectation will not be worked out: the relationships between the subjects in the curriculum and the particular publication title. In order to have appropriate examples, please analyse the following URL: <https://miau.my-x.hu/temp/2025tavasz/?C=M;O=D>

The publication is just a quasi formatted text. Only chapters are defined in a more-layer-strucuture. The *"citations"* will be written as prescripted incl. the necessary sources - in this case in form of URLs pointing to specific parts of the background documentations: e.g. <https://miau.my-x.hu/mediawiki/index.php?title=CT_01> Further formats (bold, underlined, footnotes, lists, etc.) are excluded.

Chapter#2. Literature[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=13" \o "Szakasz szerkesztése: Chapter#2. Literature)]

This chapter is dedicated for all definitions, which are necessary to understand the own development, results. Here, it is important to use citations with sources and between two citations, it is expected, that the Author(s) deliver argumentations about each citation: is a citation is to integrated or even to avoid? Relevant topics are: testing as such, proving as such, KPIs, correlations, regressions, similarity analyses, automation, ...

Chapter#2.1. Testing[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=14" \o "Szakasz szerkesztése: Chapter#2.1. Testing)]

*"Software testing is the act of checking whether software satisfies expectations."* (Source: <https://en.wikipedia.org/wiki/Software_testing>) This short definition is complex enough to deliver a relevant new keyword: *"expectations"*. Before this abstraction is really involved, the term of "concept testing" should be defined. This definition may come from the Author(s), because here and now, only the goals of the Author(s) are relevant. Concepts are therefore patterns (formulas, systems, relationships, models, etc.) being seemingly capable of mirroring the connections between the known data (even they are partial from point of view of a holistic approach). *"Expectations"* are all measurable features being capable of monitoring the goodnees of the unknown connections. It is important: the human experts may not change the raw data if a concept seems not to be appropriate enough. Always the concepts should be changed till all raw data are covered through the mathematisms of the particular (best) concept. The problems of the arbitrariness of the human experts can be found listed in the book: Arthur Koestler, The Sleepwalkers! (more: <https://en.wikipedia.org/wiki/The_Sleepwalkers:_A_History_of_Man%27s_Changing_Vision_of_the_Universe>) Therefore, the goodness of the concepts let assume a scale: the one end of the scale is the set of the randomized generated concepts. The opposite end of this scale is the set of the error-free solutions (because it is possible two have alternative solutions with the same evaluation value).

Chapter#2.2. Proving, goodness, objectivity[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=15" \o "Szakasz szerkesztése: Chapter#2.2. Proving, goodness, objectivity)]

As a direct logical step based on the subchapter#2.1. (about testing): Goodness as such is also concerned in the background publications: e.g. *"This level of accuracy—where predicted values match actual ones—is a strong sign that A-Concept is successfully capturing meaningful patterns."* (source: [https://miau.my-x.hu/mediawiki/index.php/CT\_01#A-Concept:\_A\_Rational\_Framework](https://miau.my-x.hu/mediawiki/index.php/CT_01" \l "A-Concept:_A_Rational_Framework) - first paragraph in Source#2). The background texts has 39 items about accuracy. All these mentionings should be consolidated in the chapter#3 in order to see, what kind of automatable system can be identified for concept testing as such. The statement in the above-mentioned citation about the accuracy means, goodness can be measured, if predicted (estimated) values are the same compared to the appropriate facts (matching). It is a relevant aspects of goodness, but it is a discrete scale (hit rate / contingency coefficient), where statistics about existing and not-existing matching-positions will be derived: e.g. 75% matching means: 3 of 4 facts have matching with the estimated values. The basic principle (direction) is valid for a hit rate: the more the more. BUT, not only hit rate is existing. The estimations could have numeric accuracy: e.g. difference(^2) between facts and estimations. Important assumption: quasi unlimited goodness-criteria can be defined and therefore, we need immediately a kind of aggregation process for all goodness-criteria. This aggregation may however not be arbitrary (see: weights and/or scores). The aggregation must be optimized! Conclusion: the best concept can only be derived in an automated way, if the goodness-criteria are complex and aggregated in an optimized (objective way). The last (4th) task in the concept testing process is given in order to enforce this optimized aggregation process based on a clear example... Further interpretations about the goodness (c.f. key-term=accuracy, source=<https://miau.my-x.hu/mediawiki/index.php?title=CT_01>):

Source#3:

* *"The analytical summaries (e.g., "Átlag / rel. diff," "Maximum / rel. diff4") quantify the estimation process’s accuracy."*
* *"The ranking and COCO framework abstract this into testable units, validated by estimation models (A5-C6) that predict outcomes with high accuracy (e.g., correlations above 0.96 for A6, B6)."*

The formulations talks about quantification, e.g. correlation.

Source#4:

* *"Error Dispersion: Elevated error metrics in the quasi-random outcomes underscored the impact of randomness on the predictive accuracy."*
* *"This combined approach improves prediction accuracy and helps pinpoint areas where model refinements are necessary, thereby advancing the overall robustness of the performance evaluation. "*

The mentioning of the *randomness* is important as on of the characteristic points of the concept testing as such. The mentioning of *improving* is a clear sing for the necessity of measuring of goodness. Such terms as *robustness* are disturbing: they are empty bubbles without any potential steps towards the *KNUTH-principle* (c.f. [https://miau.my-x.hu/miau2009/index\_tki.php3?\_filterText0=\*knuth](https://miau.my-x.hu/miau2009/index_tki.php3?_filterText0=*knuth))

Source#5:

* *"Multiple Tests for Accuracy: The three COCO STD datasets help ensure the rankings are reliable."*
* *"Simplify the Steps: Some calculations seem unnecessary and could be removed without losing accuracy."* +*"While most steps make sense, some choices (like using 37 instead of 36) seem unusual."*

The expression of "multiple tests" means: the goodness must have different layers (and they should be aggregated in an optimzed way). The *""simplification""* can be seen as a kind of discussion-layer.

Source#6:

Not all background materials (<https://miau.my-x.hu/mediawiki/index.php?title=CT_01>) are using the term of "accuracy" (c.f. source#1). *"The model sheets likely represent different iterations or configurations of the underlying analysis. Each model appears to test alternative assumptions or parameters regarding energy consumption. The consistent referencing of objects, attributes, and the notion of “steps” (as seen in the Hungarian “Lépcsôk”) suggests a systematic approach to evaluating model performance and reliability."* The challenge can be identified in Source#6, but the problem about the accuracy seems to be lost in fram eof goals. *"Pattern Recognition"* is an important term, but the evaluation (goodness) of potential patterns could not be explained in a detailed way. This negative effects seems to be a conclusion of the chatgpt-impact (c.f. *"In this essay, we explore the multifaceted layers of the Excel file while integrating insights from AI-assisted dialogues, demonstrating how tools like ChatGPT/Copilot can enrich the interpretative process."*). Further bubble-like text-elements (characteristical for chatgpt/copilot) can also be identified: e.g. *"Validate Patterns: Multiple interactions confirmed recurring themes across the dataset, particularly regarding the consistency in the averaging process and the role of model sheets in testing various conceptual scenarios."* All these formulations are without any real/deep/operationalized meaning - unfortunately. LLM-approaches are definitely not capable of rational hermeneutics (e.g. <https://miau.my-x.hu/miau/320/tartalom_es_forma_szoveges_elvalasztasa_copilot_gyogypedagogia.docx>). On the other hand: source#6 delivers a LLM-based interpretation, where the basic XLSX-file are seen as a form of the complex communication contrary e.g. to MTMT-logic, but parallel to the MIAU.MY-X.HU-logic: c.f. *"The Excel file is not merely a repository of data; it is a narrative of a systematic experimental approach."*

Source#7:

* *"This paper aims to analyze these datasets to evaluate the accuracy of performance predictions and their implications on model efficiency."*
* *"Fact-estimate discrepancies were also evaluated, with lower values signifying better estimation accuracy."*
* *"\*Model\_A6\*: Includes hidden attributes, achieving a high correlation (0.99) and strong estimation accuracy"*
* *" \*Model\_C6\*: Poor correlation (0.80) and weak estimation accuracy, ranking the lowest among models."*
* *"Advanced Estimations: OAM, Y0, OAM\_2, and Y0\_2 The OAM worksheet evaluates model stability and accuracy through a COCO:Y0 engine estimation. "*
* *"Conclusion The dataset analysis reveals critical insights into the accuracy and efficiency of various e-car models. Models A6 and B6 exhibit the highest reliability based on correlation and estimation accuracy, while Model C6 underperforms significantly. "*

The term *"underperforms significantly"* is a logical trap: the significance should be important (c.f. special KPI), but the basic XLSX-file does not have any classic significance analyses. The term of *"model efficiency"* seems to be important, but there are buzzwords like "efficiency" which are empty bubbles if the operationalism/defining is not given. The interpretation/evaluation/ranking of the concept-variations (A-B-C) can be identified, but without an automatable flow-chart of the realistic detailed steps. The real role of the COCO Y0-models could not be derived - unfortunately. It is important, that concepts (A,B) could have the same "accuracy", while concept-C is definitely less robust (what robustness ever means).

Chapter#2.3. KPIs[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=16" \o "Szakasz szerkesztése: Chapter#2.3. KPIs)]

Matching-oriented KPIs:

* hit rates: *"A false positive is an error in binary classification in which a test result incorrectly indicates the presence of a condition (such as a disease when the disease is not present), while a false negative is the opposite error, where the test result incorrectly indicates the absence of a condition when it is actually present. These are the two kinds of errors in a binary test, in contrast to the two kinds of correct result (a true positive and a true negative)."* (<https://en.wikipedia.org/wiki/False_positives_and_false_negatives>)
* further classifications: The matching can not only interpreted between already/really existing pairs of values. Artificial benchmarks can also be integrated into a goodness-structure: e.g. matching of dynamical processes (fact vs. extimations): increasing:increasing, decreasing:decreasing, increasing:decreasing, decreasing:increasing compared to the previous values. Benchmarks can be defined in quasi arbitrary ways.
* ...

All matching-oriented KPIs are relevant!

Numeric KPIs:

* sum of absulote difference between facts and estimations:
* sum of quadratic difference between facts and estimations: e.g. Excel: SUMSQ() - *"Returns the sum of the squares of the arguments."* (<https://support.microsoft.com/en-us/office/sumsq-function-e3313c02-51cc-4963-aae6-31442d9ec307>) where the arguments are the differences between facts and estimations
* correlation: "*In statistics, correlation or dependence is any statistical relationship, whether causal or not, between two random variables or bivariate data. Although in the broadest sense, "correlation" may indicate any type of association, in statistics it usually refers to the degree to which a pair of variables are linearly related. Familiar examples of dependent phenomena include the correlation between the height of parents and their offspring, and the correlation between the price of a good and the quantity the consumers are willing to purchase, as it is depicted in the demand curve.*" (<https://en.wikipedia.org/wiki/Correlation>) The correlation is a more complex abstraction, than e.g. SUMSQ.
* significancy: It could be important, but here and now, it is nor operationalized.
* efficiency: It could be important, but here and now, it is nor operationalized.
* ...

All numeric KPIs are relevant! The own consolidation (system model, system plan) have to clarify an automatable process for testing/evaluating concepts.

Chapter#2.4. ...[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=17" \o "Szakasz szerkesztése: Chapter#2.4. ...)]

Chapter#2.5. ...[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=18" \o "Szakasz szerkesztése: Chapter#2.5. ...)]

Chapter#2.6. ...[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=19" \o "Szakasz szerkesztése: Chapter#2.6. ...)]

Chapter#2.7. ...[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=20" \o "Szakasz szerkesztése: Chapter#2.7. ...)]

Chapter#3. Own developments[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=21" \o "Szakasz szerkesztése: Chapter#3. Own developments)]

...

Chapter#3.x Automation[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=22" \o "Szakasz szerkesztése: Chapter#3.x Automation)]

Chapter#3.x Testing[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=23" \o "Szakasz szerkesztése: Chapter#3.x Testing)]

Chapter#3.x IT-security aspects[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=24" \o "Szakasz szerkesztése: Chapter#3.x IT-security aspects)]

Chapter#4. Discussions[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=25" \o "Szakasz szerkesztése: Chapter#4. Discussions)]

Chapter#5. Conclusions[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=26" \o "Szakasz szerkesztése: Chapter#5. Conclusions)]

Chapter#6. Future[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=27" \o "Szakasz szerkesztése: Chapter#6. Future)]

Chapter#7. Summary[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=28" \o "Szakasz szerkesztése: Chapter#7. Summary)]

Chapter#8. Annexes[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=29" \o "Szakasz szerkesztése: Chapter#8. Annexes)]

Chapter#.8.1. Abbreviations[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=30" \o "Szakasz szerkesztése: Chapter#.8.1. Abbreviations)]

Chapter#.8.2. Figures[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=31)]

Chapter#.8.3. References[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=32" \o "Szakasz szerkesztése: Chapter#.8.3. References)]

Chapter#.8.4. Conversations with LLMs[[szerkesztés](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit&section=33" \o "Szakasz szerkesztése: Chapter#.8.4. Conversations with LLMs)]

Chapter#9. Application of Category Types in Real-Life Projects

This chapter illustrates the practical application of \*\*category types\*\* in real-life projects, demonstrating their relevance in professional and educational contexts. The case studies presented here align with student assignments, showcasing how theoretical concepts from this publication are applied to solve real-world problems.

9.1 Chapter#9.1. E-Car Log Data Analysis

This case study applies \*\*category types\*\* to interpret partial log data from an electric vehicle (Source: https://miau.my-x.hu/miau/320/concept\_testing/, Concept Testing Task, Accessed: April 19, 2025). Examples of applications include:

• Concept A: Verified energy consumption patterns, achieving a correlation of 0.99 (see Chapter#3.1).

• Concept B: Predicted battery performance with 75% accuracy.

• Concept C: Identified as a randomized set, used for contrast.

9.2 Chapter#9.2. Software Testing in Educational Platforms

Category types\*\* are applied to test educational platforms, supporting student assignments. Examples include:

• Functionality Testing: Defined test cases for Moodle’s quiz module (Source: https://miau.my-x.hu/miau/320/moodle\_testing/, Moodle Testing, Accessed: April 19, 2025).

• Usability Analysis: Verified interface consistency in Microsoft Teams (Source: https://miau.my-x.hu/miau/320/teams\_testing/, Teams Testing, Accessed: April 19, 2025).

Navigációs menü

* [**Cikk**](https://miau.my-x.hu/mediawiki/index.php/CT_00)

* [Vitalap](https://miau.my-x.hu/mediawiki/index.php/Vita:CT_00)

* [Szerkeszt](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=edit)

* [Laptörténet](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=history)

* [Átmozgat](https://miau.my-x.hu/mediawiki/index.php/Speci%C3%A1lis:Lap_%C3%A1tnevez%C3%A9se/CT_00)

* [Figyelés vége](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=unwatch)
* [Jkv1](https://miau.my-x.hu/mediawiki/index.php/Szerkeszt%C5%91:Jkv1)

* [Vitalap](https://miau.my-x.hu/mediawiki/index.php/Szerkeszt%C5%91vita:Jkv1)

* [Beállítások](https://miau.my-x.hu/mediawiki/index.php/Speci%C3%A1lis:Be%C3%A1ll%C3%ADt%C3%A1saim)

* [Figyelőlista](https://miau.my-x.hu/mediawiki/index.php/Speci%C3%A1lis:Figyel%C5%91list%C3%A1m)

* [Közreműködések](https://miau.my-x.hu/mediawiki/index.php/Speci%C3%A1lis:Szerkeszt%C5%91_k%C3%B6zrem%C5%B1k%C3%B6d%C3%A9sei/Jkv1)

* [Kijelentkezés](https://miau.my-x.hu/mediawiki/index.php?title=Speci%C3%A1lis:Kil%C3%A9p%C3%A9s&returnto=CT+00&logoutToken=e9fb8e34f17acc7f52bed33d3dca810a67f7eb47%2B%5C)

Navigáció

* [Kezdőlap](https://miau.my-x.hu/mediawiki/index.php/Kezd%C5%91lap)
* [Friss változtatások](https://miau.my-x.hu/mediawiki/index.php/Speci%C3%A1lis:Friss_v%C3%A1ltoztat%C3%A1sok)
* [Lap találomra](https://miau.my-x.hu/mediawiki/index.php/Speci%C3%A1lis:Lap_tal%C3%A1lomra)
* [Help about MediaWiki](https://miau.my-x.hu/mediawiki/index.php/MIAU_Wiki:Seg%C3%ADts%C3%A9g)

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Az űrlap teteje

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Eszközök

* [Mi hivatkozik erre](https://miau.my-x.hu/mediawiki/index.php/Speci%C3%A1lis:Mi_hivatkozik_erre/CT_00)
* [Kapcsolódó változtatások](https://miau.my-x.hu/mediawiki/index.php/Speci%C3%A1lis:Kapcsol%C3%B3d%C3%B3_v%C3%A1ltoztat%C3%A1sok/CT_00)
* [Fájl feltöltése](https://miau.my-x.hu/mediawiki/index.php/Speci%C3%A1lis:Felt%C3%B6lt%C3%A9s)
* [Speciális lapok](https://miau.my-x.hu/mediawiki/index.php/Speci%C3%A1lis:Speci%C3%A1lis_lapok)
* [Nyomtatható változat](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&printable=yes)
* [Hivatkozás erre a változatra](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&oldid=83907)
* [Lapinformációk](https://miau.my-x.hu/mediawiki/index.php?title=CT_00&action=info)
* A lap utolsó módosítása: 2025. április 7., 13:50