	Chapter		Section	From where? Knowledge-Input	From where? Question-Input	How? Method	What? Target-Description
0	**IT-based Automatic Text Summarization with the use of Text Generation Methods** **State of the Art and design of a prototype**			• Research Papers • Books • HongKong, TH-OHM • Online Course	1. What is the State of the Art of Text Generators and Text Summarizers? 2. In what quality can I program the text generation prototype myself and what quality does it have compared to other ones?	1. Presentation of the state of the art of Text Generators and Text Summarizers. 2. Study of the relevant aspects of Text Generation and programming of an IT-based Text Summarizer prototype.	1. State of the art technical elaboration. 2. Programming of a prototypical algorithm that generates a summary for a given review input
1	**Introduction**	**1.1**	**Structure of this Thesis**	• [0.1] • Scientific Writing	1. How is my thesis structured? 2. Which questions is my thesis going to answer, why should someone read it?	1. Brief overview over the thesis 2. Short but detailed introduction to all Chapters of this thesis.	1. Pointing out the fundamental points 2. Answer to the question, why my bachelor thesis makes sense and what is my motivation for
		1.2	**Machine Learning**	• Hong Kong ML course	1. How is Text Summarization related to Machine Learning?	1. Presentation of all relevant aspects that belong to Text Summarization	1. Zoom-In introduction from Artificial Intelligence into Text Summarization
		1.3	**Case study**	• Online Research	1. What are current useful applications of word processing systems?	1. Research on the current and planned Text Summarizer, in the field of word processing.	1. Explanation through an interesting easy introduction.
2	**Evolutionary View on the State of the Art**	**2.1**	**Text Generation Concepts**	• [1] • Paper Research	1. Which historical achievements are necessary to know for understanding the advanced concepts of Text Generation?	1. Research on the relevant aspects of state of the art research chronologically at different time steps for this topic.	1. Description of the application-oriented models for this topics using formulas and explanations.
		2.2	**Advanced Approaches for Text Generation**	• [1] • [2.1] • Books	1. What are current Text Summarizer systems capable of? 2. Where are current application fields?	1. Literature research of the Text Generation history (~60 years). 2. Literature research of current papers	1. Presentation of the history of Text Generation in the form of a chronological sequence. 2. Use of the first technologies
		2.3	**Text Summarization Concepts**	• [1] • Paper Research	1. Which historical achievements are necessary to know for understanding the advanced concepts of Text Generation?	1. Research on the relevant aspects of state of the art research chronologically at different time steps for this topic.	1. Description of the application-oriented models for this topics using formulas and explanations.
		2.4	**Advanced Approaches for Text Summary**	• [1], [[2.1], 2.2], [2.3] • Books	1. What are current Text Summarizer systems capable of? 2. Where are current application fields?	1. Literature research of the Text Generation history (~40 years). 2. Literature research of current papers	1. Presentation of the history of Text Summary in the form of a chronological sequence. 2. Use of the first technologies
3	**Prototype**	**3.1**	**Objective**	• [0] • [1] • [2]	1. What should my prototype be able to achieve with given resources? 2. Which output can be expected in the best case?	1. Reverse Engineering 2. Classification and analysis of possible results,e.g. whether the output is grammatically correct.	1. Explanation of the scope of my prototype. 2. Collection and classification of requirements for the algorithm and its output.
		3.2	**Technical concept**	• [2] • [3.1] • Online Research	1. How is my prototype structured? 2. Which algorithms do I use? 3. Which processes does the data go through? 4. How is the data processed?	1. Creation of a technical concept 2. Modeling Algorithm 3. Process Modeling 4. Data flow modeling and, or data modeling	1. Technical concept completed. 2. The prototype is modelled without IT reference on the basis of various submodels. 3. The individual processes are modelled without a concrete implementation proposal. 4. Data processing visualized
		3.3	**Implementation**	• [3.1] • [3.2] • Online Courses	1. Which technologies do I use for my prototype: - "What Python libraries and IDE?" - "What are the HW & SW requirements?"	1. Create software dependency portfolio - research of required libraries - research of required hardware, software and selection	1. Creation of an IT concept in the form of a description of the necessary technical means using sub-models
		3.4	**Evaluation**	• [3.1] • [3.2] • [3.3] • Paper Research	1. How is the output of the prototype evaluated, e.g. with which metrics? 2. How to evaluate the quality of the output? 3. How can the algorithm be improved?	1. Target/actual comparison of the requirements with the output of the prototype. 2. Comparison with related work and metrics. 3. Research on potential improvements of the algorithm.	1. Evaluation and analysis of the result based on grammatical correctness and meaning. 2. Compare better results with my result. 3. Evaluate possible optimization techniques (Chapter 2) for my prototype.
4	**Transferable knowledge**	**4.1**		[0] to [3]	By which elements could my project be modularly extended to produce a different or better result?	Generalization from the results obtained so far.	Placing the evaluation results in a social context.