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THESIS ARTIFACT SUBMISSION TWO

UNFINISHED LECTURE NOTES

Instructions

Instructions for Writing a Midterm Report

BEGIN WITH A CONCISE OVERVIEW OF YOUR PROJECT'S CURRENT STATUS compared to the plan you outlined earlier. Take this opportunity to reflect on your objectives and timeline, and discuss adjustments.

INCLUDE AN OVERVIEW FIGURE OF YOUR SYSTEM, METHODS, OR ARCHITECTURE. This schematic should clearly illustrate the major components of your approach and how they interact. Think of it as the "big picture" figure that will later appear in the introductory part of the Methods chapter of your thesis.

INTRODUCE THE PROTOTYPE, PROOF OF CONCEPT OR INITIAL IMPLEMENTATION WORK you have completed. This may include pseudo code, initial experiments, dataset preprocessing, or system components. Demonastrate development activity by providing a deployment or a means to deploy and reproduce your work.

DISCUSS ANY PROBLEMS OR CHALLENGES you have encountered so far and explain how you have addressed them or plan to address them. This may include technical obstacles, methodological uncertainty, unexpected data issues, or changes in scope. You will not find a dedicated section for this in the template, make sure to use margin-notes and introduce them as you go.

FOLLOW THIS TEMPLATE AND MAINTAIN A CLEAR, STRUCTURED FORMAT. Limit yourself to 4 pages, not counting figures or tables. Proofread your work before submission.

THESE SUBMISSIONS ARE NOT AN END IN THEMSELVES, but rather a means to an end. They serve as a scaffold for your thesis work, giving you a helpful yet decisive nudge to structure.

1
Midterm

1.1 Timeline

Begin with a concise overview of your project's current status compared to the plan you outlined earlier. Take this opportunity to reflect on your objectives and timeline, and discuss any adjustments you have made or need to make. You can use Table **??** as a reference for structuring your updated timeline. Ensure the descriptions are actionable and specific to your work. The table does not count toward your page limit, so provide as much detail as needed.

Milestone	Description	Timeline
Review	Survey recent and seminal works, identify gaps and relevant ressources.	Week 1
Definition	Formulate research questions and hypotheses based on literature findings.	Week 2
Development	Prepare data, develop methods, and conduct experiments.	Week 3–9
Evaluation	Analyze results, compare with baselines, and interpret findings.	Week 7–11
Submission	Document methods, results and conclusions; polish for thesis submission.	Week 10–12

Table 1.1: Project timeline and milestones for a 12-week research project (e.g. Bachelor Thesis).

1.2 Overview Schematic

Start with an overview that depicts your overall system, architecture, framework, and process flows. Think of this as the blueprint for your methods chapter - again this exercise is a means to an end. My doctoral advisor used to call this schematic *the thesis in one slide*.

The different components and their interactions should be clearly outlined. Where possible these also map back to your objectives and prefigure your final contributions.

WITH THE OVERVIEW SCHEMATIC IN MIND, proceed to describe each component on a high level in text as well.

1.3   Proof of Concept

INTRODUCE THE PROTOTYPE, PROOF OF CONCEPT OR INITIAL IMPLEMENTATION WORK you have completed. Demonastrate development activity by providing a deployment or a means to deploy and reproduce your work. Think jupyter notebook, think Docker container, think API endpoints, think Demo Video - whatever suits your project best, and make sure to provide access. This may also include pseudo code, initial experimental results, data analysis, or design of experiments, which you should document here.

THIS IS THE PLACE, for visuals, equations, or pseudo-code snippets that illustrate your approach.

Require: Initial parameters θ_0, learning rate ϵ, loss function $L(\theta)$

1: $t \leftarrow 0$
2: **while** not converged **do**
3:      Compute gradient: $g_t \leftarrow \nabla_\theta L(\theta_t)$
4:      Update parameters: $\theta_{t+1} \leftarrow \theta_t - \epsilon g_t$
5:      $t \leftarrow t + 1$
6: **end whilereturn** θ_t

Algorithm 1: Pseudo-code for Gradient Descent Optimization. If this is not beautiful, I don't know what is.

FINISH THIS SECTION by summarizing the key functionalities of your prototype or initial implementation, and which aspects are still under development or pending validation.