

I. IDENTIFICATION DATA

Thesis title:	High-resolution images and knowledge distillation in deep metric learning with visual transformers
Author's name:	Yongpan Fu
Type of thesis :	master
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Cybernetics
Thesis reviewer:	Giorgos Toliás
Reviewer's department:	Cybernetics

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	challenging
<i>How demanding was the assigned project?</i>	
The high level of challenge is determined by the following two factors: i) the requirements include technical background from different topics such as deep metric learning, knowledge distillation and deep network architectures, ii) the project builds on top of very recent advances which are not yet thoroughly explored.	

Fulfilment of assignment	fulfilled
<i>How well does the thesis fulfil the assigned task? Have the primary goals been achieved? Which assigned tasks have been incompletely covered, and which parts of the thesis are overextended? Justify your answer.</i>	
I consider both objectives of the assignment to be properly fulfilled. Training of FlexiViT was performed with and without distillation, reaching useful take-home messages. Some examples are: i) it is not the particular resolution setup that impacts the performance, but the model test-time complexity ii) asymmetric testing becomes beneficial even without asymmetry in the training iii) distillation gives a boost, which is nevertheless smaller than in the case of CNNs (but there was less space for improvements anyways)	

Activity and independence when creating final thesis	A - excellent.
<i>Assess whether the student had a positive approach, whether the time limits were met, whether the conception was regularly consulted and whether the student was well prepared for the consultations. Assess the student's ability to work independently.</i>	
Yongpan was well prepared at consultations (remarkably even for the very first one before the topic assignment) and had a systematic way for reporting the progress, the new findings, and encountered problems. The student maintained a very good approach regarding when to ask for feedback and a proper balance between autonomous progress and jointly discussing the critical parts.	

Technical level	B - very good.
<i>Is the thesis technically sound? How well did the student employ expertise in his/her field of study? Does the student explain clearly what he/she has done?</i>	
Yongpan obtained appropriate expertise (technical background and implementation skills) in the topic, which was a key ingredient in achieving good results on a challenging topic. The technical part is sound, while the methodology/experimental part could have been a little bit more extensive and detailed.	

Formal level and language level, scope of thesis	B - very good.
<i>Are formalisms and notations used properly? Is the thesis organized in a logical way? Is the thesis sufficiently extensive? Is the thesis well-presented? Is the language clear and understandable? Is the English satisfactory?</i>	
The structure and organization of the thesis is very good. There is a helpful flow in setting up the context and the goals. The technical part and the mathematical formulations could be more extensive.	

Selection of sources, citation correctness	A - excellent.
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THESIS SUPERVISOR'S REPORT

Does the thesis make adequate reference to earlier work on the topic? Was the selection of sources adequate? Is the student's original work clearly distinguished from earlier work in the field? Do the bibliographic citations meet the standards?

The literature is studied in appropriate depth (there was no need to extensively go through, e.g. the deep metric learning advances) and width (as mentioned above, background on different topics was necessary).

Additional commentary and evaluation (optional)

Comment on the overall quality of the thesis, its novelty and its impact on the field, its strengths and weaknesses, the utility of the solution that is presented, the theoretical/formal level, the student's skillfulness, etc.

Please insert your comments here.

III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

Yongpan has made commendable advancements in the course of his thesis work, acquiring a substantial depth of knowledge within the examined field and associated methodologies. The manuscript he has produced holds considerable value for prospective readers. Demonstrating a capacity for independent work, he has effectively delved into all predetermined objectives to an excellent degree. The experimental results not only affirm the viability of the pursued directions but also indicate promising avenues for future research endeavors

The grade that I award for the thesis is **A - excellent**.

Date: **22.1.2024**

Signature: