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In regard to your
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Place, Date

Deggendorf,
2023-08-16

Supervisor Report of Mr. Yasser El Bachiri's Master's Thesis on "Enhancing Vehicle Interior Action Recognition using Contrastive Self-Supervised Learning with 3D Human Skeleton Representations"

Dear colleagues,

Mr. El Bachiri investigates in his thesis the need for advanced action recognition systems in car interiors to enhance driver adaptation, communication and safety, particularly in the context of increasing automation. By employing self-supervised learning approaches, specifically DINO with STTFormer and PSTL with STGCN and analyzing 3D human skeleton representations on NTU RGB+D and Drive&Act datasets, the study finds competitive performance of PSTL with ST-GCN, highlighting the potential for safer driving and dynamic adaptation. The research underscores the importance of self-supervised learning in interpreting human behavior for intuitive and responsive autonomous driving systems.

Mr. El Bachiri's thesis was graded according to the grading scheme I communicated at registration as follows:

- Motivation of topic: 6/6 points
The thesis motivates the problems and investigated research questions well.
- Review of related work: 10/10 points
The thesis reviews the state of the art in depth in a pedagogical way.
- Methodology and scientificness: 12/12 points
The methodology proposed is sound and extends the state of the art.
- Quality of experimental results: 12/12 points
The results achieved are decent and should be published in a conference or journal.
- Visualization and formatting: 5/5 points
The thesis is well formatted and the content is presented in an understandable manner.
- Initiative and independence: 3/5 points
Mr. El Bachiri worked very independently on his thesis but did not provide any updates during the term. I only received a near-final draft shortly before submission.

The sum of 48/50 possible points results in a **1.0** (on a scale 1 to 5, where 1.0 is the best) for the thesis according to my grading scheme.

Sincerely,

Patrick GLAUNER

*Professor of Artificial Intelligence
Department of Applied Computer Science*