WSCG 2017 Review Report Form

Please, submit the review via WEB review upload page not latter than 17.04.2017

Paper Code: **M71**
Title of the Paper: **MAELab: a framework to automatize landmark estimation**

Please, classify the paper:
R = Research paper (presents innovative research results)
P = Practice&Experinece (presents variants, applications, case study)
S = State of the Art report (reviews of recent advances)

Paper Clasification: **P**

Paper Assessment

Please, assign INTEGER numbers as shown bellow:

0 = Totally Unacceptable	Reject	Strong Reject
1 = Poor		Must Be Rejected
2 = Marginal	Short Communication Papers	Might Be Accepted as Short Paper
3 = Acceptable		Recommended as Short Paper
4 = Good	Full Papers	Might Be Accepted as Full Paper
5 = Very Good		Recommend as Full Paper
6 = Excellent		Strongly Recommend as Full Paper

Please assess the following properties of the paper:

Originality, Novelty: **4**
Clarity of Presentation: **4**
Technical Soundness: **4**
Importance, Utility: **4**
Subject suitability: **4**
Overall Judgement: **4**

Rate your degree of confidence in evaluating the paper. Use the following scale:

1 = I have no experience in this research area
2 = I have little experience in this research area
3 = I'm confident; I have enough experience in this area
4 = I'm very confident; I know this area well
5 = I'm extremely confident; I consider myself an expert

Confidence in the Evaluation: **5**

Are Major Revisions Required? (YES/NO): **YES**

Please, describe the required changes in "Comments for the authors", taking into account the fact that the paper cannot exceed 10 pages.

Possible as a Short Paper? (YES/NO):
Possible as a Poster? (YES/NO):

Recommended Session

1	Rendering Techniques	2	GPU/Tesla/Fermi Programming
3	Geometric Computing	4	Surface Meshing, Shape Modeling
5	Physically Based Modeling	6	Image Based Modeling
7	Medical Visualization	8	Scientific Visualization
9	Computational Photography	10	High Definition Range Images
11	Constraint Motion, Simulation	12	Comp.Vision & Image Processing
13	Pattern Recognition	14	Virtual Reality & VR Interaction
15	Grap.Man Machine Interaction-HCI	16	Levels of Details (Algorithms etc.)
17	Application of Geometrical Algebra, Conformal Geometry	18	Computational Geometry
19	Compression for Graphics, Vision, Image Processing	20	Stereoscopy, Holography for Computer Graphics
21	3D Displays & 3D TV	22	Animation Techniques
23	Mobile & WEB Graphics	24	Applications

Major session for the paper: **12**
Alternative session for the paper: **24**

Comments for the Authors

The paper presents a framework to automatize landmark estimation on 2D images of the left and right mandibles of beetles. The proposal includes three steps: 1) Segmentation. Segmentation of the mandible shape using 2D photographies using a contour-based algorithm (Canny algorithm); 2) Registration. Iterative principal component analysis to register a query image on a reference image; 3) Localising estimated landmarks. Landmark estimation using the SIFT descriptor. They used a collection of 290 images of right mandibles and 286 images of left mandibles. They used 16 landmarks for the left mandibles and 18 for the right ones. These landmarks were manually located for comparison with the automatic detection. From the results, the well positioned landmarks for right mandibles were 87.03% and 78.82% for left mandibles.
Several comments to consider for improving the paper are the following:
1) The abstract should be reduced. There are many details that are not essential and make it too long. The abstract has to be more concise. It is not normal that references are included in the abstract. Elimination is recommended. Moreover, the paper is anonymous and you say "In a previous work [4], we have shown that". To this reference, add that it is not complete. It was presented as a poster in last WSCG'16. The images of Figure 1 of both papers are the same. The only difference is that in one paper appears as (a) Left mandible and in the other paper in (a) appears the right mandible; and in (b), on the contrary.
2) The state of the art section is missing. Automatic landmark detection on 2D images has been extensively used for other purposes, for example, cephalometry in human orthodontics or for face recognition. The authors should include a section with the state of the art related to their work.
3) It would be recomendable to discuss their proposal and results with regard the state of the art. In a future work, it would be recomendable to compare their results with other methods.
4) The references should be revised. Several of them are not complete ([3] and [4]). For example, the number and pages are missing in [3]. In this paper, the details are: 5(6):172-181.

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Please assess the following properties of the paper:

Originality, Novelty: **2**
Clarity of Presentation: **2**
Technical Soundness: **2**
Importance, Utility: **3**
Subject suitability: **2**
Overall Judgement: **2**

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Confidence in the Evaluation: **3**

Are Major Revisions Required? (YES/NO): **NO**

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Possible as a Short Paper? (YES/NO):
Possible as a Poster? (YES/NO):

Recommended Session

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Major session for the paper: **24**
Alternative session for the paper: **24**

Comments for the Authors

Please review carefully and correct grammatical mistakes.

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Please assess the following properties of the paper:

Originality, Novelty: **2**
Clarity of Presentation: **3**
Technical Soundness: **3**
Importance, Utility: **2**
Subject suitability: **2**
Overall Judgement: **2**

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Confidence in the Evaluation: **3**

Are Major Revisions Required? (YES/NO): **YES**

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Possible as a Short Paper? (YES/NO):
Possible as a Poster? (YES/NO):

Recommended Session

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Major session for the paper: **12**
Alternative session for the paper: **13**

Comments for the Authors

This paper proposes a method to improve the previous segmentation algorithm using the Canny algorithm, and proposes a registration procedure based on an Iterative Principal Component Analysis. Finally, the landmarks are located using a SIFT descriptor computed in the landmarks area of the model image. The research of related works is not sufficient and the contribution seems minor.
I have the following concerns:
(1) The writing of this paper needs improvement, for instance, in Section 2.1, what does the “Most often authors define these thresholds as ...” mean?
(2) In this paper, literature research is insufficient and the relevant analysis is inadequate. More specifically, this paper simply introduces the background in the section of Introduction, and lacks the analysis of related work.
(3) The introduction of the relevant methods are not greatly organized, which seems confusing on logical.
(4) This paper lacks innovation and the technical contribution seems minor.
(5) The results are not presented very clearly. Experimental comparison is less sufficient. Comparison with the state-of-the-art is required, and quantitative comparison is also needed.
