****minutes

Sub project / GAP (incl. sub projects): C-meeting (all C projects)

Date and location: 24.3.2022

Participants: Julian Shanbhag, Markus Gambietz, Iris Wechsler, Simon Heinrich, Sophie Fleischmann, Linus Hötzel, Alexander Wolf, Jörg Mieling, Marlies Nitschke, Björn Eskofier

Keeper of the minutes: Sophie Fleischmann

Date and location for next meeting: 28.04. (might be moved to to Empkins event), location tbd

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| **topic 1 – Status Updates** |
| content/description: |
| **Julian**: still working on literature review, almost done with evaluating papers but nothing is written yetWorking title: Integration methods of postural control in digital human models: A systematic literature review* Who will be contributing to the publication 🡪 preferably all C projects + Jürgen Winkler
* To discuss further:
* How & when will the other authors contribute/help with Julians paper
* Which target journal? JBiomech disadvantage: very long response time, Frontiers also not optimal, ? Transactions biomechanical engineering would be nice, but also has a long response time (which might not be too important though at this stage of the SFB)
* Next steps:
* discuss choices for review not only at ktmfk, but also with persons from MaD to get another perspevtive & opinions
* write expose/outline, make a first structure of review with bullet points (not yet fully fomulated) and send to PIs to get structural feedback

**Sophie:** no research question formulated so far, first ideas for study with patients* Study must be planned carefully, further discussions necessary about what we need (which markers, scenarios etc.) to not forget something
* Think about research questions & which metrics will be needed & evaluated
* Present study design in group
* Think about hiring Hiwis for the labeling & take the Hiwis to the measurement so that they know the setup etc
* Possible Problem: 2 force plates not enough to capture the whole gait cycle, how can we handle this?
* Is it possible to buy a treadmill that might also be used in the clinic?

**Markus:** Sensitivity analysis on hold, not much progress since Waischenfeld* Idea: use 10Dof18Mus openSim Model for our 2D optimal control simulation instead of the current 2D model
* Needs to be implemented first
* It doesn’t make sense to carry out the sensitivity analysis before having the model
* Publication targets:
* Metabolic cost paper (but validation is very difficult)
* No further plans for the paper on sensitivity analysis yet

**Simon:** Improving the kinematic hand model and prepare measurements that will start next week Current research question: How to include markers & other typsed of data in optimal control simulation* developed method to synchronize a Kinect with the measurement together with A01 (might be interesting also for other measurements)
* Need to recruit participants for the measurements, especially elderly (61-80) might be difficult 🡪 search on nebenan.de
* Publication target:
* Optimal control simulations of the hand during grasps
* uncertainties in gait measurements (as Co-author)

**Iris:** working on literature review, almost done but nothing is written yetWorking title: Enhancement of dynamic consistency in digital human modeling: A systematic literature review, * to be submitted 2nd quarter of 2022
* Focus of research question changed compared to initial topic, all papers had to be reevaluated
* Same discussion points as for Julian (which journal etc. )
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| tasks and responsibilities: |
| * Can we install 3rd forceplate in Sigrids lab? 🡪 we don’t know, but Simon will ask
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| **topic 2 – Empkins Video** |
| content/description: |
| * Should we film a person walking on the treadmill?
* Maybe it can be useful also for other presentations with markers etc afterwards
* 🡪 lets do this!
* Marlies needs to write scipt for main video of C projects. There is 1 scene where scientists are standing in front of monitor and discuss something. Ideas for video:
* write formulas & discuss them
* show opensim video of movement & mimic the movement
* show video of person walking and pretend to click on muscle / .. 🡪 monitor zooms in on something / shows a matching graph
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| tasks and responsibilities: / |
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| **topic 3 – Data Storage** |
| content/description: |
| * There is now a folder on the HPC for storing our data (this solution might not be final, but the best for now), Markus will write guide how to access it and send around
* The folder itself is not structured yet 🡪 TODO
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| tasks and responsibilities: |
| * Send instructions on how to create HPC account / access folder / store the data there 🡪 Markus
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| **topic 4 – Format of future C Meetings** |
| content/description: |
| * Have one google doc in which everyone can insert their slides
* Maybe use the structure from Simons slides today as template
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| tasks and responsibilities: |
| * Create template and send link around 🡪 Markus
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| **topics for next meeting** |
| 🞏 Status updates🞏 tbd🞏🞏🞏 |

**Notes:**

* Room is not available for the next meetings. We can go to the Meeting room or seminar room of Ktmfk
* We have to maybe move the Gap Meeting next month, because of an Empkins event at the 28. 🡪 wait for the official invite from Heike and then decide when to do the meeting