

## **Declarations of co-authorship**

# Declaration of co-authorship (PhD thesis)

Under Section 12 (4) of the *PhD order\**, a declaration on the extent and nature of the relative contributions, signed by the collaborators and the author, must accompany the PhD thesis if the dissertation or parts of it are the result of collaboration.

Co-authors should fulfil the requirements of the Vancouver rules\*\*

1. General information	
Candidate's name	Esben Høegholm Lykke
Title of PhD thesis	Enhancing the Accuracy and Efficiency of Sleep and Physical Activity Monitoring using Machine Learning Techniques Utilizing Free-Living Accelerometer Data

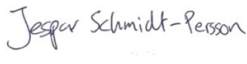



2. This co-author's declaration applies to the following article/manuscript No. 1
Manual Annotation of Time in Bed Using Free-Living Recordings of Accelerometry Data

The extent of the candidate's contribution to the article is assessed on the following scale

- A. has contributed to the work (0-33%)
- B. has made a substantial contribution (34-66%)
- C. did the majority of the work (67-100%)

3. Declaration on the individual elements	Extent (A, B, C)
1. Formulation in the concept phase of the basic scientific problem on the basis of theoretical questions which require clarification, including a summary of the general questions which it is assumed will be answered via analyses or concrete experiments/investigations.	B
2. Planning of experiments/analyses and formulation of investigative methodology in such a way that the questions asked under (1) can be expected to be answered, including choice of method and independent methodological development.	B
3. Involvement in the analysis or the concrete experiments/investigation.	C
4. Presentation, interpretation and discussion of the results obtained in the form of an article or manuscript.	B

4. Co-authors' signatures

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23-08-2023	Anders Grøntved	Professor	
04-09-2023	Jan Christian Brønd	Associate Professor	

5. Candidate's signature


\*The Danish *Ministerial Order on the PhD Programme at the Universities (PhD order)*, no. 18 of 14 January 2008

**\*\*Vancouver rules:** "All persons named as authors must satisfy the authorship requirement. The order of names must be a joint decision taken by all the authors. The individual author must have participated in the work to a sufficient extent to be able to accept public liability for the content of the scientific work. Authorship can only be based on substantial contribution with regard to: 1) conception and design or analysis and interpretation of data, 2) drafting the article or revising it critically for important intellectual content, and 3) final approval of the version to be published. *Involvement based only on obtaining funding for the work or collecting data does not qualify for authorship. Neither does general supervision of the research group in itself qualify as authorship.* If the authorship is collective, key persons who are responsible for the article must be identified. The editors of the scientific periodical may ask authors to account for their part in the authorship."

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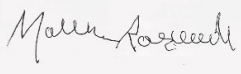
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Title of PhD thesis	Enhancing the Accuracy and Efficiency of Sleep and Physical Activity Monitoring using Machine Learning Techniques Utilizing Free-Living Accelerometer Data


2. This co-author's declaration applies to the following article/manuscript No. 2
Generalizability and performance methods to detect non-wear free-living accelerometer recordings

The extent of the candidate's contribution to the article is assessed on the following scale

- A. has contributed to the work (0-33%)
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2. This co-author's declaration applies to the following article/manuscript No. <u>1</u>
Improving Sleep Quality Estimation in Children and Adolescents: A Comparative Study of Machine Learning and Deep Learning Techniques Utilizing Free-Living Accelerometer Data from Thigh-Worn Devices and EEG-Based Sleep Tracking


The extent of the candidate's contribution to the article is assessed on the following scale

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21-08-2023	Sarah Overgaard Sørensen	Cand.scient	
23-08-23	Anders Grøntved	Professor	
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05-09-23	Jan Christian Brønd	Assistant Professor	

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