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Correction

Correction: Li et al. Mechanism Design of a Novel Device to Facilitate Mobility, Sit-to-Stand Transfer Movement, and Walking Assistance. *Machines* 2025, *13*, 134

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In the original publication [1], there were several mistakes in the main content.

Text Correction

We kindly request the correction of the following sections of text.

There were some errors in the original publication. Some expression sentences were not correct and some formulas were not true because we did not incorporate the parameters into these formulas correctly.

A correction has been made to Section 2.3.2, Paragraph 3.

Original Text:

where vectors $\boldsymbol{S_1}$, $\boldsymbol{S_2}$ and $\boldsymbol{S_3}$ are unity vectors. δ, ε, and σ are given by

Corrected Text:

where vectors $\boldsymbol{S_1}$ and $\boldsymbol{S_2}$ are unity vectors. δ, ε, and σ are given by

A correction has been made to Section 2.3.2, Formula (27).

Original Text:

$$\theta_4 = \begin{cases} atan2(\boldsymbol{S}\cdot(\boldsymbol{u}_4 \times \boldsymbol{v}_4), \boldsymbol{u}_4\cdot\boldsymbol{v}_4) \pm acos\left(\frac{\|\boldsymbol{u}_4\|^2+\|\boldsymbol{v}_4\|^2-d^2}{2\|\boldsymbol{u}_p\|\|\boldsymbol{v}_p\|}\right) \\ \frac{\pi}{2} - atan2(m_4, n_4) \end{cases} . \quad (27)$$

Corrected Text:

$$\theta_4 = \begin{cases} atan2(\hat{\omega}_4\cdot(\boldsymbol{u}_4 \times \boldsymbol{v}_4), \boldsymbol{u}_4\cdot\boldsymbol{v}_4) \pm acos\left(\frac{\|\boldsymbol{u}_4\|^2+\|\boldsymbol{v}_4\|^2-d^2}{2\|\boldsymbol{u}_p\|\|\boldsymbol{v}_p\|}\right) \\ \frac{\pi}{2} - atan2(m_4, n_4) \end{cases} . \quad (27)$$

A correction has been made to Section 2.3.2, Paragraph 18.

Original Text:

Based on the second Paden–Kahan subproblem, we defined the process of solving θ_1, θ_2, and θ_3 as follows: Point q_k is rotated until it is aligned with q_k''; then, q_k'' is rotated until it is aligned with q_k'''; finally, q_k''' is rotated until it is aligned with q_k'. On the coronal, horizontal, and sagittal planes, the $\boldsymbol{u}_p$ values are, respectively, represented by $\boldsymbol{u}_1$, $\boldsymbol{u}_2$ and $\boldsymbol{u}_3$; the $\boldsymbol{v}_p$ values are, respectively, represented by v_1, v_2, and v_3. Based on Formula (2), we derived

Corrected Text:

Based on the second Paden–Kahan subproblem, we defined the process of solving $\boldsymbol{\theta_1}$, $\boldsymbol{\theta_2}$, and $\boldsymbol{\theta_3}$ as follows: Point $\boldsymbol{q_k}$ is rotated along $\boldsymbol{\theta_1}$ until it is aligned with $\boldsymbol{q_k''}$; then, $\boldsymbol{q_k''}$ is

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rotated along $\boldsymbol{\theta_2}$ until it is aligned with $\boldsymbol{q_k'''}$; finally, $\boldsymbol{q_k'''}$ is rotated along $\boldsymbol{\theta_3}$ until it is aligned with $\boldsymbol{q_k'}$. Based on Formula (2), we derived.

A correction has been made to Section 2.3.2, Paragraph 18.

Original Text:

Based on Formulas (8)–(11), q_k'' and q_k''' are

Corrected Text:

where $\boldsymbol{p_{a1}}$ and $\boldsymbol{u_2}$ are the vectors which are exactly equal and which are both point from $\boldsymbol{q_h}$ to $\boldsymbol{q_k''}$. $\boldsymbol{p_{a2}}$ and $\boldsymbol{v_1}$ are the vectors which are exactly equal and which are both point from $\boldsymbol{q_h}$ to $\boldsymbol{q_k'''}$. $\boldsymbol{u_1}$ is the vectors point from $\boldsymbol{q_h}$ to $\boldsymbol{q_k}$ and $\boldsymbol{v_2}$ is the vectors point from $\boldsymbol{q_h}$ to $\boldsymbol{q_k'}$ Based on Formulas (8)–(11), we obtained

A correction has been made to Section 2.3.2, Paragraph 19.

Original Text:

Based on the second Paden–Kahan subproblem and Formulas (28)–(42), the solutions of θ_1, θ_2, and θ_3 are

Corrected Text:

Based on the second Paden–Kahan subproblem and Formulas (28)–(42), the solutions of $\boldsymbol{\theta_1}$, $\boldsymbol{\theta_2}$, and $\boldsymbol{\theta_3}$ can be derived by

Some corrections have been made to Formulas (30)–(35) and (37)–(43):

$$\boldsymbol{p}_{a1} = q_k'' - q_h = (0,\ m_1,\ n_1)^T, \tag{30}$$

$$\boldsymbol{u}_2 = \boldsymbol{p}_{a1} = (0,\ m_1,\ n_1)^T, \tag{31}$$

$$\boldsymbol{p}_{a2} = q_k''' - q_h = (m_2,\ n_2,\ s_2)^T, \tag{32}$$

$$\boldsymbol{v}_1 = \boldsymbol{p}_{a2} = (m_2,\ n_2,\ s_2)^T, \tag{33}$$

$$\boldsymbol{v}_2 = q_k' - q_h = (m_3,\ s_3,\ n_3)^T. \tag{34}$$

$$q_k'' = \delta_1\hat{\boldsymbol{\omega}}_2 + \varepsilon_1\hat{\boldsymbol{\omega}}_1 + \sigma_1(\hat{\boldsymbol{\omega}}_2 \times \hat{\boldsymbol{\omega}}_1), \tag{35}$$

$$\delta_2 = \frac{(\hat{\boldsymbol{\omega}}_3\cdot\hat{\boldsymbol{\omega}}_2)(\hat{\boldsymbol{\omega}}_3\cdot\boldsymbol{u}_2) - \hat{\boldsymbol{\omega}}_3\cdot\boldsymbol{v}_2}{(\hat{\boldsymbol{\omega}}_2\cdot\hat{\boldsymbol{\omega}}_3)^2 - 1}, \tag{37}$$

$$\delta_1 = \frac{(\hat{\boldsymbol{\omega}}_2\cdot\hat{\boldsymbol{\omega}}_1)(\hat{\boldsymbol{\omega}}_2\cdot\boldsymbol{u}_1) - \hat{\boldsymbol{\omega}}_2\cdot\boldsymbol{v}_1}{(\hat{\boldsymbol{\omega}}_1\cdot\hat{\boldsymbol{\omega}}_2)^2 - 1}, \tag{38}$$

$$\varepsilon_2 = \frac{(\hat{\boldsymbol{\omega}}_3\cdot\hat{\boldsymbol{\omega}}_2)(\hat{\boldsymbol{\omega}}_2\cdot\boldsymbol{v}_2) - \hat{\boldsymbol{\omega}}_3\cdot\boldsymbol{u}_2}{(\hat{\boldsymbol{\omega}}_2\cdot\hat{\boldsymbol{\omega}}_3)^2 - 1}, \tag{39}$$

$$\varepsilon_1 = \frac{(\hat{\boldsymbol{\omega}}_2\cdot\hat{\boldsymbol{\omega}}_1)(\hat{\boldsymbol{\omega}}_1\cdot\boldsymbol{v}_1) - \hat{\boldsymbol{\omega}}_2\cdot\boldsymbol{u}_1}{(\hat{\boldsymbol{\omega}}_1\cdot\hat{\boldsymbol{\omega}}_2)^2 - 1}, \tag{40}$$

$$\sigma_1 = \pm\sqrt{\|\boldsymbol{u}_1\|^2 - {\delta_1}^2 - {\varepsilon_1}^2 - 2\delta_1\varepsilon_1(\hat{\boldsymbol{\omega}}_2\cdot\hat{\boldsymbol{\omega}}_1)}, \tag{41}$$

$$\sigma_2 = \pm\sqrt{\|\boldsymbol{u}_2\|^2 - {\delta_2}^2 - {\varepsilon_2}^2 - 2\delta_2\varepsilon_2(\hat{\boldsymbol{\omega}}_3\cdot\hat{\boldsymbol{\omega}}_2)}. \tag{42}$$

$$\begin{cases} e^{[\hat{\omega}_1]\theta_1}q_k = q_k'' \\ e^{[\hat{\omega}_2]\theta_2}q_k'' = q_k''' \\ e^{[\hat{\omega}_3]\theta_3}q_k' = q_k''' \end{cases}. \tag{43}$$

The authors state that the scientific conclusions are unaffected. This correction was approved by the Academic Editor. The original publication has also been updated.

Reference

1. Li, B.; Chen, X.; Liu, H.; Yuan, D.; Zhang, J.; Lu, S. Mechanism Design of a Novel Device to Facilitate Mobility, Sit-to-Stand Transfer Movement, and Walking Assistance. *Machines* **2025**, *13*, 134. [CrossRef]

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