

ergoIA. Artificial Intelligence applied to ergonomic risk assessment.

DESCRIPTION OF INVENTION

ergoIA is a software that uses Artificial Intelligence (AI) for the automatic analysis of the movements of people at their workstations for its ergonomic evaluation. The system does not require specialized video capture equipment for further processing and does not require the use of markers or sensors.

ergoIA integrates, in its first version, the ergonomic risk assessment methodologies OWAS (Ovako Working Analysis System), REBA (Rapid Entire Body Assessment), and repetitive tasks. Over the coming years, and in accordance with the technological development roadmap, ergoIA will continue to evolve to incorporate the main ergonomic risk assessment methodologies according to users' needs.

The ergonomic assessment process is simple and fast, the steps are as follows:

1. **Task identification.** The process begins with the identification of the fundamental tasks of a workstation in order to select the most appropriate ergonomic risk assessment methodology.
2. **Capture.** The video capture system is simple and can be performed from any

mobile device following simple guidelines. The video can be trimmed from within the application itself to evaluate exactly the desired task.

3. **Processing (IA).** Processing begins with the import of the video to be analysed into the ergonomist's ErgoIA software. ergoIA processes the video and interprets all the worker's movements and assigns ergonomic risks that the professional can see on the screen while the video is being played.
4. **Results.** The results provided by ergoIA allow occupational risk prevention professionals to obtain the ergonomic risk levels of a task by entering these results into ergonomic risk assessment software. This input is done automatically in Ergo/IBV, as the two systems are fully integrated.

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BUSINESS APPLICATIONS

The business application sectors of the technology belong to the field of occupational risk prevention and ergonomics:

- **External prevention services:** companies contracted to perform the function of occupational risk prevention especially in industrial and ergonomic high-risk activities for their assessment and design.
- **Own prevention services:** large organizations who can integrate occupational risk prevention functions into the company's internal activities for workstation evaluation and design.
- **Ergonomics consultancies:** consultancy in specific projects for the optimization of workstations and the creation of new ergonomically adequate workstations.
- **Academic institutions and research centres:** incorporation of new technologies that represent the future of occupational ergonomics for the training of students and technological development.

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TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

The advantages offered by the invention compared to traditional methods of ergonomic evaluation (counting and identifying postures manually by the person who evaluates), or other technological solutions (based on sensors or positional markers worn by workers), are as follows:

1. **Saves time.** ergoIA reduces the video processing time required for ergonomic risk assessment by up to 85%.
2. **Eliminates bias.** The results of the ErgoIA ergonomic analysis eliminate the subjectivity and bias that can occur with classic evaluation methodology
3. **Reduces costs.** The significant reduction in the time required for video processing reduces the cost of each analysis
4. **Simplifies the process** by not requiring instrumentation, experience of the evaluating technician, calibration of the space and enables the collection of the videos to be analysed from any device, simplifies the process significantly.

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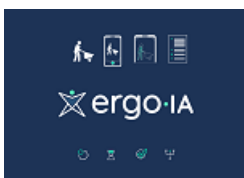
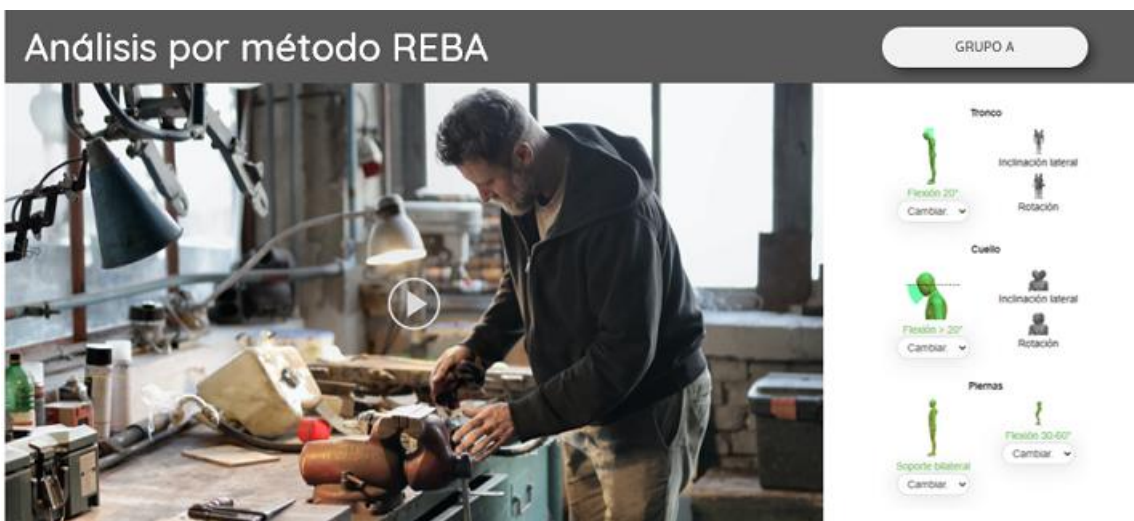
STATE OF TECHNOLOGY DEVELOPMENT

TRL 9: system tested in real operational environments.

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CONTACT INFORMATION

Name: Mercedes Sanchis Almenara

Position: Director of Market Innovation in Occupational Health and Wellness and head of ergoIA.

Mail address: mercedes.sanchis@ibv.org

Phone number: +34 649308771