What's Trending

Robotic finger with a highly precise sense of touch over a complex, multicurved surface

(Source: ScienceDaily, Feb 2020)

Researchers have managed to replicate a robotic version of the human finger capable of accurate touch sensing and force detection over complex 3D surfaces. The sensorised robotic finger is built using accessible manufacturing methods and designed for integration into robotic hands. Almost one thousand signals collected from the finger can then be processed using machine learning techniques to derive useful information.

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Relevance: Besides the use in manufacturing and logistics, such technology can also be applied in future to healthcare and services to reduce the risk of amputations or musculoskeletal disorders in work tasks where physical human touch is required.

OWL Highlights

Occupational accidents in immigrant workers in Spain: The

complex role of culture

Cultural differences had sometimes been cited as one of the causes of workplace accidents amongst migrant workers. This research examined if cultural differences, which include language, cultural distance and national cultural values between the host country and the home countries of immigrants are associated with their work accident rates.

Using data of migrant workers from 34 countries in Spain in 2015, the study found that migrant workers from non-Spanish-speaking countries had fewer accidents than their counterparts from Spanish-speaking countries, suggesting that language did not play a determining role in the occurrence of a greater number of accidents. Similarly, cultural distance was not positively associated with a higher accident rate. On the other hand, workers from countries that have societal scores in pragmatism and preparedness for the future, which suggested a higher perception for safety, health and risk avoidance, saw lower accident rates.

These results suggested that intervention programmes should focus mainly on cultural values that are related to accidents, rather than reducing all cultural differences between the native population and migrant workers.

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Theme: Workplace Culture
Date of Publication: Jan 2020
Source: Safety Science

Leading indicators – a conceptual IoT-based framework to produce active leading indicators for construction safety

Active leading indicators (ALIs) are measurements or information streams that provide an indication of the safety performance of a firm or project. This study proposed a framework that can collect and analyse real-time quantifiable ALIs by utilising the emerging

Internet of Things (IoT) technology to collect quantifiable data, which can then trigger an actionable response in real time based on established thresholds.

A case study in the Constructions sector was used to validate this framework. It showcased how application of proximity sensors and sensor-enabled wearables can be deployed to provide the ALIs to alert and prevent common accident causes such as struck-by and slip, trip and falls incidents. The framework also provided a step-by-step example of how ALIs can be identified and evaluated for effectiveness.

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Theme: Technology
Date of Publication: Dec 2019
Source: Safety

Posture wellness solutions in the workplace: A current review

Journal of Ergonomics

Posture Wellness Solutions in the Workplace: A Current Review

ABSTRACT

INTRODUCTION

Evaluating existing research on ergonomics, the purpose of this review was to find out the effectiveness of ergonomic interventions and prevention programmes designed to prevent musculoskeletal disorders (MSD) from work in office settings. Findings showed that sit-stand desks, ergonomic workstations paired with ergonomic training and posture-correction technology were effective in alleviating workers' musculoskeletal symptoms. The study also suggested that wellness technology and posture improvement methods could become more cost-effective in the near future to address MSD issues.

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Theme: Ergonomics
Date of Publication: Jan 2020
Source: Journal of Ergonomics

Useful Resources

- Exposure to biological agents and related health problems in animal-related occupations (European Agency for Safety and Health at Work, 2019)
- Ergonomic assembly tools can ease the pain of manufacturing (Occupational Health & Safety, Jan 2020)
- Psychosocial and ergonomic conditions at work: Influence on the probability of a workplace accident (BioMed Research International, Nov 2019)
- What workplace interventions help workers with MSDs, pain and mental health conditions return to work? (Institute for Work and Health, Dec 2019

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Mission: Provide evidence-based, insightful and practical solutions.

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