

Technology Offer

Stress-detection algorithm for wearable devices is offered for licensing.

Summary

A Slovenian research institute is offering licensing of a computer implemented algorithm for stress detection. The algorithm was evaluated in a real-life setting and is integrated in a prototype application for managing mental health and well-being. The researchers are looking for a company active in the health and wellbeing market able to implement the algorithm in commercial wearable applications in the framework of a license agreement.

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Last Update	13 March 2018
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Reference	TOSI20170301001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/7b4b9823-041d-4bab-8d58-fcceb42d8354

Details

Description

Continuous exposure to stress is harmful for mental and physical health. Solutions for efficient, accurate and user-accepted automated stress detection are still missing on the market. Artificial intelligence researchers from a Slovenian public research institute have developed and tested an algorithm for continuous detection of stressful events. The algorithm is using data from a wrist device which is capable of measuring users' heart rate (HR), blood volume pulse (BVP), galvanic skin response (GSR), skin temperature (ST), time between heartbeats (IBI) and accelerometer data. The offered technology is a computer implemented algorithm, however the proposed algorithm in a combination with appropriate wrist device (which must be provided by the partner sought) can constitute a competitive product for the health and well-being market.

Authors of the algorithm are computer science experts specializing in development of proprietary methods and algorithms for analyzing wearable sensor data used mainly in the health domain but applicable to other domains as well. The team has been among finalists of the global competition for medical diagnostic devices. They have won the international competition for activity recognition. They are active in several projects for the development of smart watch monitors for independent living of seniors with dementia; detection of falls and abnormal behaviours for elderly; support older workers in reducing physical and mental stress using wristband and personalized advices and decision support to help patients with heart problems.

The researchers are looking for companies who are interested in obtaining a licensing

agreement for the stress-detection algorithm. Companies should be able to cover and organize all commercialization services (marketing and sales, distribution, after sales support). In particular, the following companies from wellness and health sectors are sought:

- companies which develop and produce wearable wireless wellbeing, sport and fitness devices;
- companies which offer solutions for remote patient monitoring, on-site professional healthcare monitoring and home/office/work environment monitoring.

Advantages and Innovations

Most of the related artificial intelligence algorithms for monitoring stress are tested in laboratory scenarios for which they are specialized. However, when tested in the real-life scenarios their performance drops significantly. The offered algorithm in addition to the high performance in laboratory scenarios achieves high performance also in uncontrolled, real-life scenarios.

This is thanks to the novel context-based machine-learning approach. The algorithm combines several machine-learning components to find out the context under which certain event happens, before it detects whether it is stressful or not. One of the components is a laboratory stress-detection classifier trained on laboratory data to distinguish between stress and no-stress physiological signals. Another component is a proprietary activity-recognition classifier which continuously recognizes user's activity and thus provides context information about real-life circumstances. The third machine-learning component is a classifier trained on real-life data which combines the outputs of the other two components (laboratory stress classifier and activity-recognition classifier) and provides the final decision whether a certain situation is stressful or not. The recognized user's activity and computation of features for stress detection from the above mentioned physiological signals (BVP, HR, ST and GSR) improves the ability to distinguish between genuine stress in real life and the many situations which induce a similar physiological arousal (e.g., exercise, eating, hot weather, etc.). This is the main advantage as opposed to other known approaches in the research community and on the market.

Stage of Development

Prototype available for demonstration

Comments Regarding Stage of Development

The algorithm was evaluated in a laboratory and in a real-life setting. The accuracy on 55 days of real-life data, for distinguishing stress vs. no-stress events was 92%. The algorithm is integrated in a smartphone prototype application for managing mental health and well-being. Complete solution is available for demonstration. The algorithm is being constantly improved and tested. The authors of the algorithm have necessary knowledge to offer all the engineering expertise and support (research team of 30 people) to the potential licensee to implement the algorithm in a commercial product.

IPR Status

Secret Know-how, Exclusive Rights, Copyright

Profile Origin

Private (in-house) research

Keywords

Technology

01003003	Artificial Intelligence (AI)
01003006	Computer Software

01004001 Applications for Health

Market

05010002 Cognitive aid
07001007 Other leisure and recreational products and services
07004002 Health and beauty aids
09003004 Distributors, imports and wholesalers

NACE

M.72.1.9 Other research and experimental development on natural sciences and engineering

Network Contact

Issuing Partner

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Open for EOI : **Yes**

Dissemination

Send to Sector Group

ICT Industry and Services

Client

Type and Size of Organisation Behind the Profile

R&D Institution

Ref: TOSI20170301001

Year Established

1949

Turnover

20 - 50M

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English
Slovenian
Croatian

Client Country

Slovenia

Partner Sought

Type and Role of Partner Sought

The research institute is looking for industrial partners who are interested in obtaining a licensing agreement for stress-detection algorithm for wearable devices.

In particular following partners from wellness and health sectors can be involved in a licensing agreement:

- companies which develop and produce wearable wireless wellbeing, sport and fitness devices;
- companies which offer solutions for remote patient monitoring, on-site professional healthcare monitoring and home/office/work environment monitoring.

Companies should be able to cover and organize all commercialization services (marketing and sales, distribution, after sales support).

Type and Size of Partner Sought

SME 11-50, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

License agreement

Attachments

Technology Request

French company is looking for sustainable flexible waterproof materials for outdoor sport equipment

Summary

A large French company specialized in outdoor sport equipment is looking for sustainable flexible waterproof materials which can be used in his field, to reduce environmental impact of his product. The product must have a laboratory proof of concept, and could be recently marketed. The company is looking for a license agreement or a technical cooperation.

Creation Date	30 April 2018
Last Update	04 May 2018
Expiration Date	05 May 2019
Reference	TRFR20180420001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/a58e3073-1627-4689-8b3b-07dfc92d127d

Details

Description

A large French company specialized in outdoor sport equipment is looking to extend their project portfolio in sustainable flexible waterproof materials through initiating new partnerships with academic or hi-tech partners.

The company is focused on waterproof soft flexible material (not water repellent) with a very low environmental, such as biosourced fibers, highly recyclable components, recycled materials, green waterproofing processes, ...

The scope of interest is not limited to fabric and can be extended to films, membranes and any other soft material suitable for waterproofing applications.

This material will be used in outdoor sport equipment application.

The company is looking for academic or start-up company projects with a validated proof of concept in the laboratory. The product shouldn't be marketed or licensed yet. Recently marketed product can be acceptable.

The company is looking for a license to buy to extend their project portfolio or a technological agreement to integrate the technology to their product.

The French company is able to support the transfer and the commercialization of the project

Technical Specification or Expertise Sought

The partner searched should have an expertise with waterproof materials, with either alternative sources, innovative process, functionalisation, or improved end of life.
The company is looking for academic or start-up company projects with a validated proof of concept in the laboratory. The product shouldn't be marketed or licensed yet. Recently marketed product can be acceptable.

Keywords

Technology

02007018	Advanced Textile Materials
03005007	Textile fibres
10002013	Clean Production / Green Technologies

Market

07001004	Sporting goods, hobby equipment and athletics clothes
07004001	Clothing, shoes and accessories (including jewellery)

NACE

G.47.6.4	Retail sale of sporting equipment in specialised stores
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Network Contact

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Open for EOI : **Yes**

Dissemination

Send to Sector Group

Materials

Client

Type and Size of Organisation Behind the Profile

Industry >500

Year Established

0

Already Engaged in Trans-National Cooperation

No.

Languages Spoken

English
French
Spanish

Client Country

France

Partner Sought

Type and Role of Partner Sought

The company is looking for a technology with a validated proof of concept.

The French company is able to support the transfer and the commercialization of the project

Type and Size of Partner Sought

SME 11-50, University, R&D Institution, SME <10

Type of Partnership Considered

License agreement
Technical cooperation agreement

Attachments

Technology Request

Audiovisual company is seeking for a technical partner with expertise in software development for robotic cameras

Summary

German-Spanish SME with extensive expertise in the audiovisual market is looking for a technical partner in order to collaborate in the development of a new product for the production of audiovisual events using robotic cameras. The type of agreement sought is technical cooperation. The partner should have experience with software development for applications sending and receiving data to and from robotic cameras.

Creation Date	19 April 2018
Last Update	04 May 2018
Expiration Date	04 May 2019
Reference	TRES20180417001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/1b4d7450-c875-45e5-a179-d1e59c92eed3

Details

Description

The German-Spanish company has been taking care of the audiovisual component of the production of events for many years, developing a vast knowledge and a deep understanding of the industry, evolving with the market.

This expertise has allowed them to detect many opportunities within the audiovisual market, which would improve some important processes.

For that reason, they recently created a Research&Development department, which looks to tackle these opportunities by producing products and services to provide a solution to the detected issues.

On this note, they have conceived a product that will improve the way live directors work with productions using robotic cameras, making the whole process more efficient and precise. This will leave room for the live director to make more creative decisions, significantly improving the final result.

The product envisaged is based on three different technologies: tactile interfaces, computer vision and robotic cameras.

The partnership sought is a technical cooperation agreement. Therefore, the partner sought should be able to produce a prototype level result on one or many of these three technologies, following the design and specifications defined by the Spanish team.

Technical Specification or Expertise Sought

Potential partners should be familiar with one or many of the following technologies:

- Development of tactile digital interfaces.
- Bi-directional communication with robotic cameras.
- Computer vision.

Stage of Development

Concept stage

Comments Regarding Stage of Development

The concept has been defined and tested by gathering the opinion and demands of a diverse group of live directors. The company has already come up with a visual prototype.

The research work concludes the need of the following technologies for the development of the product: tactile interfaces, computer vision and robotic cameras.

Further steps would be the production of a prototype based on one or many of these three technologies, following the specifications defined by the Spanish team.

Keywords

Technology

01001001	Automation, Robotics Control Systems
01003006	Computer Software
01003018	User Interfaces, Usability
01003020	Building Automation Software
01006001	Audiovisual Equipment and Communication

Market

09003002	Advertising and public relations
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NACE

M.73.1.1	Advertising agencies
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Network Contact

Issuing Partner

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Open for EOI : **Yes**

Dissemination

Send to Sector Group

ICT Industry and Services

Client

Type and Size of Organisation Behind the Profile

Industry SME <= 10

Year Established

2007

Turnover

1 - 10M

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English
German
Spanish

Client Country

Spain

Partner Sought

Type and Role of Partner Sought

The project will be managed by the Spanish team with an agile-like methodology. This implies a high level of communication between the partners.

The partner sought should be working in the audiovisual sector or have competences on robotic

cameras and be willing to gain expertise/enter the audiovisual sector.

The partnership will have the characteristics of a technical cooperation agreement, and the sought partner should take care of one or many of the following tasks:

- Developing a tactile interface.
- Developing the protocol for communication with robotic cameras.
- Developing the software responsible for analysing the data received from the above mentioned cameras.

All these three tasks are based on the design and specifications previously defined by the Spanish team.

In addition, both partners are expected to share their expertise on the different topics in order to make the best decisions for the excellence of the end result.

Although initially the partnership will only encompass the current project, the Spanish team is interested in creating a network of partners for future projects.

Type of Partnership Considered

Technical cooperation agreement

Attachments
