Smart AI rings can monitor heart rate and many other health indicators

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In the past decade, the size of general health monitoring tools and cardiovascular monitoring in particular have been scaled many times, from the size of a toaster of a few decades ago into Small smartwatches that you can carry with you wherever you go. And in the context of the technology world is still growing rapidly today, the fact that smaller health monitoring devices appear may not be something too unexpected. Recently, Korean researchers have successfully tested the heart rate monitoring technology in a smart ring with extremely small size, supported by deep learning algorithms, and they hope that This ring can also be used to detect more complex and dangerous health conditions, such as atrial fibrillation, in the near future.

1. How did AI affect daily life?

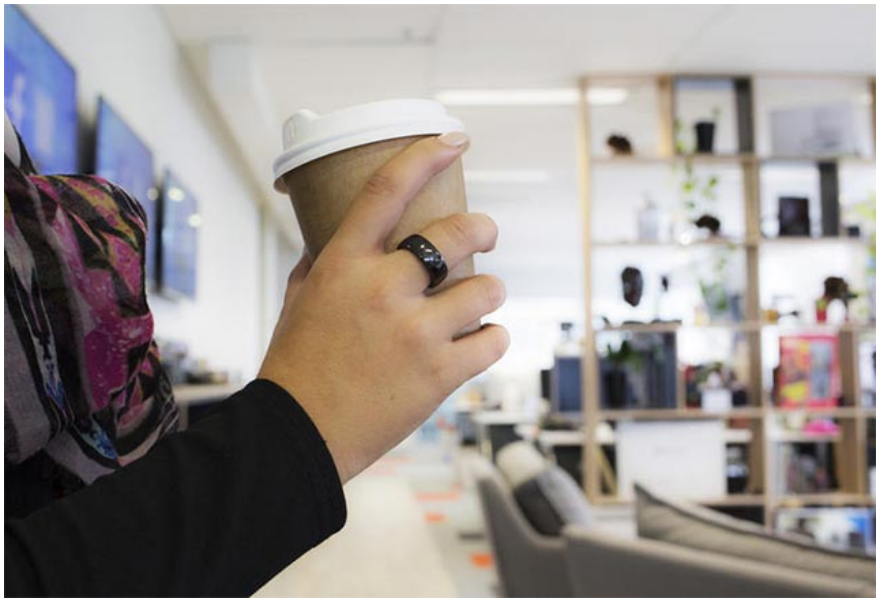
Korean scientists' research was presented earlier this week as part of the International Heart Science event hosted by Heart Rhythm Society. During the presentation, the researchers conducted simultaneous comparisons of the results obtained from many ECG systems (electrocardiograms) and optical sensors based on optical sensors, which were implemented for 119 diseases. The patient suffers from atrial fibrillation (AF) worldwide, with results obtained from a convolutional neural network (Deep Learning model) trained through optical imaging data. Accordingly, this convolutional neural network achieved 99.3% accuracy in diagnosing atrial fibrillation,

and achieved a 95.9% accuracy in the diagnosis of a common heart rhythm. In particular, the above figures are up to 100% and 98.3%, respectively, after low quality results samples are filtered out. The researchers said the average confidence level would be 98.6% for the correct classification and 80.5% for the misclassification.

1. Improve the effectiveness of assessing depression status by AI models

'Our diagnostic performance in this deep learning model is equivalent to that of a conventional pulse oximeter at the medical level. However, we also want to further evaluate the performance of this deep learning algorithm with a newly developed wearable device, which can be used in daily operations, specifically a ring clever. This will help bring higher feasibility in screening the risk of atrial fibrillation in the community. In addition, we also hope that this ring can be used to detect atrial fibrillation in clinical trials through its non-invasive properties, 'said Seoul Eue-Keun Choi Associate Professor of the Hospital. Korea National University, the head of the research team shared.

Currently, the biggest obstacle to the practical use of smart wearable devices like smartwatch is battery life. These devices often have to be charged daily or weekly, so the prospect of monitoring cardiovascular health on a smaller wearable device such as rings is also a factor that makes scientists headaches. However, due to not having to use energy for other features such as screen, sound or more complex processor like smartwatch, so the tiny battery on this smart ring still ensures sufficient power supply Needed for heart rate monitor parts.



1. Google AI application in detecting eye diseases

In addition, there is another barrier that prevents users from accessing previous cardiovascular monitoring devices that are large and extremely expensive. The emergence of this new smart ring hopes to help create more positive changes in the health equipment market, making them everyday, affordable companions for each person. .