Japan develops ML-based screening tool for cervical myelopathy

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Application of machine learning (ML) for early diagnosis and treatment of a disease

A research team from Tokyo Medical and Dental University and Keio University in Japan combined a finger motion analysis technique using a non-contact sensor and machine learning (ML) to develop a simple screening tool for Cervical myelopathy (CM).

CM results from compression of the spinal cord in the neck and causes difficulty moving the fingers and unsteady gait. As patients with early-stage CM have minimal subjective symptoms and are difficult for non-specialists to diagnose properly, the symptoms can be aggravated before patients are diagnosed with CM by a specialist. Therefore, the development of screening tools is required to realize the early diagnosis and treatment of CM.

In this study, the team focused on changes in finger motion caused by CM. The tool (Leap Motion) developed by the team allows for non-specialists to screen people for the possibility of having CM.

The screening test results can be used to encourage those with suspected CM to seek specialist's attention for early diagnosis and early treatment initiation. A goal of this research is to prevent disease aggravation which can cause decline in the physical functioning and social loss.