

## ‘Mind-controlled wheelchairs’: Helping paralyzed people navigate the world with just their thoughts

Three people with [paralysis](#) of all four limbs used their thoughts to steer a wheelchair through a cluttered room with a reasonably high level of accuracy. This suggests people with paralysis could move independently through certain rooms, but the technology may not be advanced enough to navigate a busy street.

A range of different researchers have previously used two main strategies to test mind-controlled wheelchairs on non-disabled people. The first involves a person focusing on a flickering light in a particular location. This generates brain signals that an [artificial intelligence](#) translates into wheelchair movements towards that location, but this approach often leads to eyestrain.

The second strategy involves implanting electrodes in the brain. These accurately transmit brain signals to an AI, but only following a highly invasive procedure that carries a risk of [infection](#).

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Testing a third strategy, [José Millán](#) at the University of Texas in Austin and his colleagues recruited three people with little or no movement in any of their limbs. The team assessed whether a brain-computer interface could steer an electric wheelchair based on brain activity generated when these individuals imagine moving their limbs.

Each participant wore a skullcap containing 31 electrodes, which could non-invasively detect signals from a brain region that regulates movement, called the sensorimotor cortex. These signals were transmitted to a laptop fixed on the back of the wheelchair, where an AI translated them into wheel movements.

**[This is an excerpt. Read the full article here](#)**