

Revolutionary device will show the way forward for the blind

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The device will warn users about kerbs and dips in surface. Credit: University of Melbourne

Daily life for blind and vision-impaired people will be dramatically improved following the development by University of Melbourne researchers of a prototype of an electronic device to help them avoid non-protruding obstacles.

The prototype, which can be attached to a cane, walking frame or wheelchair, uses lasers and a camera to identify non-protruding and potentially hazardous obstacles such as kerbs, potholes, descending stairs, and dips in the pavement.

Associate Professor Elaine Wong, Professor Marimuthu Palaniswami

and Dr Aravinda Sridhara Rao, from the Department of Electrical and Electronic Engineering, are combining their various skills in intelligent sensors, scanning technology and photonics to develop what they aim to be a hands-free laser optical [device](#).

"When fully developed, the device will be a safeguard against falls, which are of major concern, particularly among the elderly," Associate Professor Wong says.

The idea arose after Associate Professor Wong's now nine-year-old was born with [congenital blindness](#).

She contacted Vision Australia and offered her skills as an engineer in the hope she could help improve the independence and safety of the vision-impaired.

"I wanted to do something tangible, that could have a real impact. Maintaining people's quality of life cannot be underestimated," she says.

The team's next step is to miniaturize the prototype and refine the lasers so they work under all lighting conditions.

They also aim to make the final device as cheap, portable and user-friendly as possible for the 360,000 vision-impaired people in Australia and the 285 million worldwide.

"While the real-time navigation and safety gains are obvious, there are also clear social benefits in helping vision-impaired people continue their social interaction, ensure they stay healthy as they get older, and develop confidence and skills in getting around," Associate Professor Wong says.

Provided by University of Melbourne

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