

## Hidden Emotions



Think you can tell when your child is playing fast and loose with the truth?

According to Kang Lee, PhD, a professor at the University of Toronto's Institute for Studies in Education, neither parents nor professionals who work daily with children are very good at detecting when children are lying.

In a 2016 TED Talk, Dr. Lee explained that when children lie, their blank expressions belie a sea of emotions raging inside, including fear, shame and guilt. The neuroscientist says there's a reason we can be so easily fooled by our own offspring: despite the fact that human beings are emotional creatures, 90 percent of our true emotions are invisible to the naked eye.

“ To detect what lies beneath the poker face, Dr. Lee developed a technology called *Transdermal Optical Imaging (TOI)* — and established a company to help businesses access the true feelings and desires that drive human behavior.

TOI takes advantage of the changes in blood flow that occur in the network of blood vessels just under the facial skin as we experience different emotions. The process begins with a conventional video camera recording of a subject, which then undergoes Dr. Lee's patent-pending image processing technique to create transdermal video images of facial blood flow. Applying advanced machine learning algorithms to the transdermal video reveals the specific emotions associated with blood flow changes. Using TOI, the emotions associated with lying are detectable with an

accuracy of 85 percent.

To take TOI to market, Dr. Lee received help from the University of Toronto's Innovations and Partnerships Office and MaRS Innovation, which developed a go-to-market plan, filed patents in key markets and introduced him to experienced business managers and investors. Today, NuraLogix Corporation is pursuing the market research industry with an eye on security, healthcare and artificial intelligence for future TOI applications.

Lying, Dr. Lee told his TED Talk audience, will never be the same again.

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