

Mathematician develops vocal method of testing for Parkinson's disease

June 25 2012, by Bob Yirka

Parkinson's disease is one of a number of cruel degenerative ailments that slowly rob those afflicted of their faculties. What starts out as a minor tremor in the hands, eventually grows to a life altering condition. Some notable people, such as Michael J. Fox and Muhammad Ali have the disease and because of that, it has become much more well known over the past few decades.

Another notable person suffering from its effects is Andy Grove, one of the founders of chip maker Intel, a man that has dedicated millions of dollars to the study of the disease to help in both early detection and perhaps to someday find a cure. Now, due in part to his generosity, another man, mathematician Max Little has found that a computer program he's written running algorithms he's devised, is remarkably good at diagnosing the disease by analyzing voice alone.

Little, a Technology, Entertainment and Design (TED) fellow, developed his algorithms while working on his PhD at Oxford applying math algorithms to voice disorders. More recently, when he learned of a large number of voice recordings made by Parkinson's patients in a study by a team of researchers working under a grant by Grove, he wondered if what he'd come up with earlier might help to identify the disease.

The recordings were meant to be used as anecdotal testimony to help researchers learn more about the progression of the disease. Instead of listening for contextual information though, Little ran the recorded voices of close to 50 of the patients and an equal number of non-

afflicted people, though his algorithms. In so doing, he found he was able to detect which voices belonged to those with the disease in 86% of cases. This is important news because currently there is no blood test for the disease, which means diagnoses generally only comes about when a person has reached the stage where tremors have become noticeable. And as with most diseases, the earlier a diagnosis can be made, the better for the patient.

Because Little's algorithms are based on learning, the more information fed into a common database, the better the system becomes at detecting the disease. To that end, he has set up a [web site](#) that lists phone numbers for people to call if they'd like to help. By dialing in, people can have their voice recorded and added to the database. Little is seeking both those that have the [disease](#) and those that don't, and lists phone numbers for people in several countries and of course in several languages.

The hope is that a large enough database will grow from this effort to provide the basis for a true diagnostic tool that doctors around the world could use to help identify the neurological disorder at a much earlier stage than is now available.

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