

# Biomedical informatics student creates device for Parkinson's disease

March 2 2012, By Christina Silvestri

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By utilizing technology within smartphones, Di Pan has created a state of the art device to measure tremors in patients with Parkinson's disease.

Utilizing technology within smartphones and tablets for patient advantage, Di Pan, a doctoral student at ASU's Department of Biomedical Informatics (BMI), has created a state of the art device to measure tremors in patients with Parkinson's disease.

Pan, a data analyst at Barrow Neurological Institute, is working in collaboration with Rohit Dhall of the Institute's Deep Brain Stimulation Clinic, and St. Joseph's Hospital and Medical Center on the project.

The application measures the tremors and transmits the information to the doctors, allowing enhanced communication between parties, where key data points can be relayed to the doctor's office if they meet a

particular predefined threshold.

Pan began work on the project as a research assistant in early 2011. Based on the data retrieved, Pan and his research team can design the algorithms used to analyze the data.

Pan said the idea came to him when playing the game Labyrinth on his iPhone, paralleling the motion-dependent disease.

All patients have to do is either handhold or apply the [device](#) to their ankle for 30 seconds and tap the screen, allowing the accelerometer of the tablet or [smartphone](#) to record movement.

The goal of the device is to relate the information measured to a patient's electronic medical records (EMRs) so doctors may log in and review the trends. This also swaps time consuming patient checkups with the convenience of retrieving results from home in an efficient manner.

Of course, the regularity of in-clinic patient checkups is dependent upon the stage of the disease and medication modifications. If the information received from the device is negative, meaning the disease has worsened, the patient will need to physically visit the physician at the clinic.

For instance, levodopa is a commonly used medication for the disease that can also cause major complications. Although symptoms may disappear upon initial treatment, they may resurface, often unknowingly, with time. Using the evaluation device, a patient may easily track his/her response rate as often as every half hour.

The app is currently in its test phase.

Equipped with hardware and Internet support, the application is designed to be compatible with Apple's iPhone and Google Inc.'s Android

platform.

For the remainder of his time at BMI, Pan looks to verify the accuracy and usability of the device. Pan hopes to graduate in either summer or winter 2012.

Provided by Arizona State University

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