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Focused on introducing an Affordable Parkinson's disease Mobility Assessment Tool based on their 3D and HMI (Human Machining Interface) Technology to go along with its use in Robotics, PCs and Game Consoles, Dinast is well Positioned for Growth

Technology
HMI

Dugan Um
CEO

BIO:
Dugan Um achieved his Ph.D in Mechanical Engineering in the University of Wisconsin at Madison. Sensitive robotic skin for unknown environments motion planning was the subject of his dissertation. After he received his degree, he joined Caterpillar Inc. as a research engineer and worked for 4 years at Caterpillar R&D group and Research center. His main interests at Caterpillar included payload control system research and development for a wheel loader and condition based health monitoring system for turbo diesel engine system.

Currently he is at Texas A&M University - Corpus Christi delivering his 4 years of engineering experiences into classes. He is currently an assistant professor of Mechanical Engineering and Engineering Technology program at Texas A&M University-Corpus Christi. His teaching interests are in solid mechanics, automation/robotics, and solid modeling applications.

He is also the founding member of DINAST (www.dinast.com), currently serving as CEO. DINAST sets forth a mission toward natural HMI between human and various devices such as computers, game stations, PDA devices, as well as devices for harsh environment applications including industrial shop floors, surgery rooms, construction sites, underwater, etc. The main vision is to provide an af-fordable solution for natural HMI devices via a realtime 3D surface modeling technology, thus offering alternatives for PC mouse, game console, surgical instrument console, etc…

About DINAST:
DINAST is a dynamic high-tech company dedicated to the 3D imaging and HMI (Human Machine Interface) technology. Launched in 2009, DINAST promotes 3D imaging technology for wide range of industrial needs from entertainment to robotics via its patent pending single sensor 3D technology.

Interview conducted by:
Lynn Fosse, Senior Editor

CEOCFO: Dr. Um, what is the focus at DINAST?
Dr. Um: Our focus is toward the natural HMI, which is Human Machine Interface, between humans and various devices. Such as computers, games, PDA, as well as devices for harsh environment, most likely industrial shop floors or surgery rooms, constructions sites, and underwater, or other places where conventional interface is not going to be available, or not appropriate because of the sanitary concern. Then our goal again is to provide a portable solution for natural Human Machine Interface device. We offer realtime 3D surface modeling technology, so that we can generate the human body motion of gestures for PC, or game consoles. We can drive machines such as surgical instrument console, or PC mouse, or even a complex system such as robots based on simple gesture based interface.

CEOCFO: Most of us are familiar with the concept of Wii and how that works, but how common is HMI in some of the areas you have mentioned, or is this a brand new field that people are starting to work in?
Dr. Um: HMI has been in the market for the last couple of decades. It is not brand new in the market, but we are still searching for a solution that somehow enables natural gestures of the human body to input commands to the different consoles, again, such as PC or game consoles, or some other devices. This has been an issue more in the research area of robotics and automation, or some areas where conventional computers cannot be used for some reason. As the demand for high-tech devices such as robots are coming in to our domestic areas, we want to incorporate this technology into various machines, so that we interact with machines in a better, more natural way.

CEOCFO: What specifically is DINAST working on today?
Dr. Um: At the moment, we offer three different lines of products. The first one is the 3D sensor, an indoor 3D sensor, called Cyclopes II. This device allows capturing point cloud data, which is 3D shape data of an object. For example, if you put your hand right in front of the camera, the camera can detect the shape of your fingers. As you change the shape of your fingers or gesture, the camera can detect the variation, or the change in your gestures, so that it generates commands for devices. The second one is the outdoor 3D device, called the Cyclopes OD. This has been in the market very recently, and the motivation of this sensor was

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to be able to use HMI in an outdoor environment, with for example, in strong sunlight. The third product is the T-Less NG (Next Generation). This device is the one that physically allows you to replace a mouse, keyboard for your computer PC so that you can actually use very simple gestures to control the mouse pointer on your screen. Current interest in our company at the moment is to somehow develop more applications with these 3D sensor technologies. The first one we presented at the WBT 2012 last week was to make a medical device for Parkinson's disease patients so that we can perform subjective mobility assessment for a patient in the rehabilitation process. We hope we can introduce an affordable Parkinson's disease mobility assessment tool based on our 3D sensor technology.

CEOCFO: In your focus on Parkinson's disease, do you have the plans for the device and need the funding to work on it, or does DINAST need the funding to do the research?

Dr. Um: We have at the moment, done some preliminary research to see if the idea is suitable to use the sensor for the Parkinson's disease patients. The purpose of our presentation at WBT 2012 last week was, again, to seek funding for development of this medical device. Introducing the new device to the medical market is very expensive, including the fees for the FDA certification, and filing for intellectual properties as well as patient testing for product validation. All of that involves very high level of expenses. We were looking at the possible funding situation, the main opportunity during the WBT last week.

CEOCFO: What made you decide to start with a device of that type?

Dr. Um: If you watch the entertainment industry or gaming industries, 3D has been manifested into many different devices, such as 3D cameras to capture actors' motion to make 3D movies, or Microsoft Kinect used to catch players motion to control the avatar in the game. 3D seems to become a main stream in various fields. I believe this technology will blossom in many different areas such as medical device area, and HMI area, etc. I believe it could be used for weapons for the battlefield operations as well.

I was able to make the first prototype of this device, and fortunately, there was a private sector investor who actually wanted to see the technology moving forward, and so here we are now. We started this company about a year ago, and we have very steady sales at the moment. Our customers are mostly university research faculties or students who want to test and

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incorporate this technology into their own applications. In addition, we are actively involved in many other opportunities nationally and internationally, so we can introduce the technology to as many people as possible and cooperate to introduce this to different sectors of industry.

CEOCFO: What do you find is people's general response--what do people not understand, and what is the 'aha' moment when they realize this can really work?

Dr. Um: The 'aha' moment usually comes when they test the device, and they are really thrilled about device itself, and yet at the same time, people do not see many applications of this technology. I would have to explain all of the potential of this technology and possible applications. That was a little bit difficult—for me to spread the word, and the usefulness of the technology, but whenever I show this to the different customers, they are really excited about the technology. Again, there are some people in the conference who are seeking a doable technology, such as already made Parkinson's disease rehab tools meaning, if the tool is developed, then they are willing to participate in the marketing or finding the potential customers. We are at the moment of pushing this to the more usable forms of the device, first for the medical device, and also for the various types of other industries as well.

CEOCFO: Why should DINAST stand out for investors and people in the business community and why is DINAST an important concept for people to pay attention to now?

Dr. Um: As I said, 3D presentation, 3D modeling, as well as 3D sensing capabilities seems to be very important and a key technology in the future for entertainment and interaction with machines as the machines become more complex, and computers become smarter. I believe that the keyboard and mouse concept will all be changed, just like the touch inputs on tablet becomes prevailing. We use touch motion, and a on-screen keyboard when you use iPad and Samsung Galaxy tablet, and I believe this is a trend of the future. Virtually, I think this touch-based technology will evolve into not-touch based or just simple gesture based control to use the functionality of your tablet computers or other input consoles. We can convey more information at a time by gestures then a simple mouse click or simple touch on the screen. That is why I think it is very important technology for our future.