Center of Excellence
WIRELESS AND INFORMATION TECHNOLOGY
AT STONY BROOK UNIVERSITY

NEWSLETTER
JULY 2017

CEWIT2017 Final Call for Papers, Transforming Smart Tech, Innovative App Development, For Entrepreneurs: The Effects of Name Fluency on Investors

CEWIT is an unparalleled resource, advancing the science and technology underlying the next epoch of the information revolution.

CEWIT2017 Conference

FINAL CALL FOR PAPERS

SUBMIT AUGUST 1-15, 2017

Our inbox is full. We've heard your requests and have extended the submission period to August 15.

CEWIT2017 is the premier international forum on the applications of emerging technologies in infrastructure, healthcare, and energy — **three of the most critical components of a smarter global environment.**

Topics include the Internet of Things, Cybersecurity, Big Data, Health Technologies, Smart Energy, Smart Urban Systems, and TechEntrepreneurship.

CEWIT2017 will be held on November 7-8, 2017 at CEWIT, Stony Brook University.

Submit Today: www.cewit.org/conference2017

Center of Excellence
WIRELESS AND INFORMATION TECHNOLOGY
AT STONY BROOK UNIVERSITY

TRANSFORMING SMART TECH

CEWIT, Stony Brook University researchers fueled by National Science Foundation funding help to push the limits of today's smart devices

Today's smartphone is often referred to as the swiss army knife of modern life. There is an app at our fingertips for just about any purpose. More often than not, there is not just one, but multiple apps to meet our daily needs, from social, entertainment, and environmental to health and transportation.

However, there are boundaries to this immense convenience and flexibility – it is limited to software only. For example, there is no app to measure the air pollutant levels in the home. The reason is simple: as smart as today's commodity phones are, they are not equipped with special sensors that can measure these pollutants. Such limitations in hardware - both sensors and radios - have been a major roadblock to a true swiss army knife device whose hardware can be reconfigured to suit purposes beyond commodity smartphones.

A team of CEWIT-affiliated faculty researchers in the College of Engineering and Applied Sciences at Stony Brook University received a $822,419 NSF award to help address this gap in smart technologies. CEWIT Division Director of Communications and Devices, Professor Fan Ye, along with professors Peter Milder and Yuanyuan Yang will design, create and evaluate a

novel hardware and software platform where modularized FPGA/software computation components can be easily composed like interlocking Lego pieces, to create customized edge sensing and computing devices for smart applications.

In mobile computing, vehicular systems and IoT scenarios, sensors or radios in varying types and quantities are necessary, such as a vehicle fitted with multiple cameras shooting at different directions and distances. This platform would create prototypes of different sizes and capabilities. The most powerful ones, at tablet grade, would have high peripheral capacity and computing power while smaller ones, at power-socket grade, would have less resources.

"Our goal is to provide an easily customizable research platform whose hardware and software can be reconfigured to support systems and applications in vehicular/mobile computing and IoT" said Fan Ye, assistant professor in the Department of Electrical and Computer Engineering, and the principal investigator on the NSF-funded project. **"If successful, this would provide the ideal 'swiss army knife' device, far beyond what current smartphones can offer, and a vibrant source for a myriad of future innovations."**

By developing libraries that support different hardware and software functionality, users can pick and choose suitable modules and compose the hardware/software, connect sensors and radios, and conduct processing tasks, many of which could be compute-intensive.

Fan is a recent recipient of the National Science Foundation's prestigious Early Career Development (CAREER) Award receiving $450,000 over 5 years to develop software and hardware architectures and systems demanded in smart environments.

Also in app development, award-winning research co-authored by Department of Computer Science assistant professor, Xiaojun Bi, outlines the design, decoding algorithm, and implementation for **COMPASS, a rotational keyboard that will be used to enter text into smartwatches without the need for a touchscreen.**

Entering text on smartwatches is currently quite difficult, especially on those without a virtual keyboard. **COMPASS is a text entry method that is based in the bezel of the watch, allowing the user to rotate three cursors that will enable them to select which letter they want to type.** After selecting their letter, the locations of the cursors are then dynamically optimized to reduce the distance of the next rotation. This is similar to the predictive typing that most users would be familiar with on their smartphones, but finally allows a comparable method to be applied to smartwatches for the first time.

The researchers evaluated the performance of COMPASS with a series of user studies, which revealed that with 90 minutes of practice, users increased their typing speed from 10 wpm (words per minute) to 12.5 wpm. As stated in the research paper, an advantage of the circular layout is that different from conventional QWERTY keyboards T9 keyboards (the keyboard on the Samsung Gear S2 smartwatch), is that it allows the remaining screen area to be in a round shape. Therefore, the screen contents can be scaled to fit in the inner area without changing the look-and-feel. **Watch it here.**

The recipient of a 2017 Google Faculty award, Xiaojun's research lies in the general area of human computer interaction, with a primary focus on building interactive systems, designing interaction techniques, and studying fundamental issues of user interface design on mobile devices.

ADVANCED MANUFACTURING

NEW CEWIT NEIGHBORS

ART AND AI
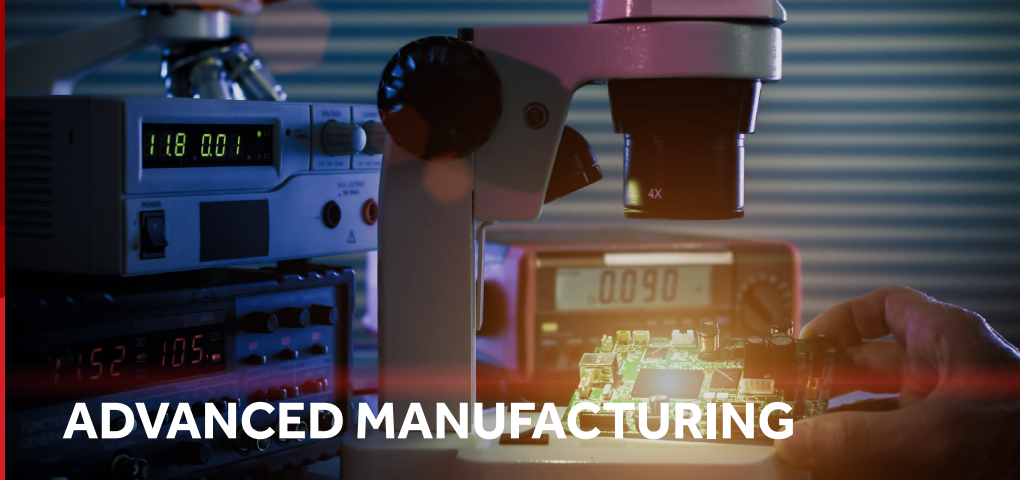
Business Optimization with Advanced Manufacturing
The CEWIT2017 Conference's Smart Systems session focuses on advanced manufacturing and infrastructure. Expert speakers from both industry and academia present on innovative solutions and discuss the current and future trends of smart systems across a multitude of industry-relevant domains. This month, FuzeHub and NYSTAR host a webinar for entrepreneurs looking to optimize their competitive edge with high-tech manufacturing research. **Join them on August 15, 2017.**

Stony Brook University Wins $75M for Medical Tech Institute, the Newest Addition to its R&D Park
Stony Brook University was awarded a $75 million state grant for a new institute where medical devices and treatments will be developed and commercialized. Empire State Development voted unanimously to pay for the construction of 70,000-square-foot building to be used by the Institute for Discovery and Innovation in Medicine & Engineering, or I-DIME. **Innovation and Discover Center also on the way.**

Artists Forging a Relationship with Artificial Intelligence
Artists are investigating questions of identity, agency and consciousness through the use of AI in their practices and many aspects of human-machine interaction are under scrutiny. The use of AI in art comes in many guises. Stephanie Dinkins, pssociate professor at Stony Brook University and Digital Arts Co-Director, who is currently undertaking a project with BINA48, the "world's most advanced humanoid robot", told Sleek Magazine: "There is so little separation between 'me' and 'my technology'. We need to have an association with and relationship to technology. **As more advanced AI is on the horizon, the debate about the role of AI in art, and its validity as art, is inevitable." Learn More.**

NAME GAME

CEWIT business expert, professor Richard Chan's new research explores the effects of name fluency on investors, entrepreneurs take note

What's in a name? Maybe everything, if you're a startup in need of early-stage capital. **A new study by researchers from Stony Brook University, Drexel University and Villanova University explores the effects of "name fluency" on investors – that is, the familiarity, uniqueness and phonetic influence of a company name, and how venture capitalists tend to react.**

By exploring "the two ways you can evaluate a name, two kinds of fluency," the study aims to be a resource to entrepreneurs and investors alike, according to co-author Richard Chan, an assistant professor in Stony Brook University's College of Business and CEWIT business expert who conducted the research with Drexel professor Haemin Park and Villanova professor Pankaj Patel.

"You can evaluate on phonetics – how easily you can pronounce each phonetic segment, what you would refer to as 'pronounceability,'" Chan told Innovate LI. "And you can evaluate on linguistic fluidity – how easily you can recognize a word, whether it appears frequently in English literature. What you may refer to as 'uniqueness.'" The study, "The Effect of Company Name Fluency on Venture Investment Decisions and IPO Underpricing," examined 131 crowdfunded projects and 1,681 initial public offerings.

Among its key findings: Phonetics rule, as companies with easy-to-pronounce names performed better with seed-stage investors and on fundraising throughout the business-formation stages. That's not to say entrepreneurs who choose unique names for their enterprises can't score with investors – though, in the long run, being too clever can cost you, according to Chan.

"Uniqueness is a bonus in the very early stages of venture investment," the professor noted. "What we found is that uniqueness has a positive effect when it comes to getting the early funding, but in the late stages – like, an IPO – the uniqueness has no effect."

But that's not the case for the phonetically focused, according to the study, which shows that the easy-to-say have an easier time up and down the capital-investment line. **"The pronounceability has a positive effect for both early and late-stage investors," Chan said. "Early-stage investors prefer to invest in companies whose names are fluent or pronounceable."**

The study does not examine the influence of company names on target markets, instead positioning itself as a resource for factions on both sides of the startup-capital coin.

"We were mainly interested in determining how entrepreneurs can get better funding," Chan noted. "That's why we looked at investment decisions across different stages."

The study, coming soon in its entirety to the academic finance journal Venture Capital, is not the first collaboration for Chan, Park and Patel, who shared an office as PhD candidates at the University of Washington. And it's not their last: The team is again combining the resources of the Villanova,

Drexel and SBU business schools, this time examining the "determinants" influencing online crowdfunding efforts.

Basically, the researchers will consider the project, the entrepreneur(s), the geographic location and the year of the crowdfunding campaign – no two are the same – for a "macro level" look at how these factors contribute to the campaign's performance, according to Chan. Like their study exploring the influence of startup names on pre-venture and early-stage financing, the researchers see the crowdfunding research as another tool – potentially, a critical one – in an innovation economy built on new business formation.

"We believe people can be both rational and irrational at the same time," Chan said. "They tend to be influenced by both important information and less-relevant information.

"By exploring how informational cues and non-informational cues could influence a business decision, we're trying to help the entrepreneurs and the investors," he added. "Entrepreneurs can better prepare when they pitch their ideas to investors, and investors can improve the way they make their decisions, to be more effective and efficient. Those are our ultimate goals."

Chan's research domain is broadly situated at the intersection of psychology, entrepreneurship, and strategic decisions. Specifically, he investigates how actors' cognitive processes, shaped by individual differences and altered by social and ambient environments, influence the identification and evaluation of entrepreneurial opportunities and earnings forecast decisions. He has educated CEWIT audiences on **How Kickstarter Investors Make Their Decisions and How Images and Color in Business Plans Influence Venture Investment Screening Decisions.**

OUR COMMUNITY

The Advanced Energy Center

Center for Advanced Technology in Diagnostic Tools and Sensor Systems (Sensor CAT)

The Center for Biotechnology

The Center for Corporate Education and Training at Stony Brook University

The Clean Energy Business Incubator Program (CEBIP)

The College of Business at Stony Brook University

The College of Engineering and Applied Sciences at Stony Brook University

Empire State Development: NYSTAR

IEEE Long Island Section

Long Island High Technology Incubator

The Manufacturing and Technology Research Consortium (MTRC)

The New York Academy of Sciences

Small Business Development Center at Stony Brook University

Center of Excellence
WIRELESS AND INFORMATION TECHNOLOGY
AT STONY BROOK UNIVERSITY

Stony Brook University